THE PROJECT METHOD IN CLASSROOM WORK

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HOTCHKISS

Jane Good

AN EXHIBIT OF WILD FLOWERS AND GRASSES IN CONNECTION WITH A NATURE-STUDY PROJECT

THE PROJECT METHOD IN CLASSROOM WORK

BY

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PREFACE

This volume is the outgrowth of the author's experience in two distinct aspects of work in teachers' colleges: (1) in teaching the theory and underlying principles of method of classroom instruction to students who are preparing to teach and (2) in directing and supervising the practice teaching of such students.

Part One of this volume is devoted to a brief discussion of the theories and fundamental principles underlying the method of teaching. While the discussion is based upon the results of studies in educational psychology, technical terms have been avoided, thus making the contents easy of comprehension for all teachers.

Part Two consists of detailed descriptions of projects that have been worked out in the classroom in connection with the work of training teachers. In this part the author has endeavored to illustrate concretely how the theory and principles set forth in Part One function in project work.

The author acknowledges the helpful coöperation and untiring assistance of the training-teachers of Teachers College, Kansas City, Missouri, in the preparation of the manuscript. He wishes to acknowledge here also his gratitude to the members of the faculty of Teachers College for reading the manuscript and for helpful suggestions and criticisms.

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CONTENTS

PAGE

INTRODUCTION ix

PART ONE. BACKGROUND

PRINCIPLES AND LAWS 3
- NATIVE EQUIPMENT 3
- EDUCATION 5
- DRIVE, OR INNER URGE 9
- LAWS OF LEARNING 16
- THINKING 21
- LAWS OF HABIT FORMATION 24
- MEMORY 26
- DEMOCRACY 27

PART TWO. PROJECTS ACTUALLY WORKED OUT IN CLASSROOMS

CHAPTER

I. UNITS OF SUBJECT MATTER 31

II. THE PROJECT 41

III. *PROJECT:* A SAND MAP OF AFRICA 55

IV. *PROJECT:* A JAPANESE MATINÉE 72

V. *PROJECT:* THE MILK FAIRIES 84

VI. *PROJECT:* AN AMERICAN LEGION REUNION . . . 97

VII. *PROJECT:* THE WORLD'S SERIES 111

VIII. *PROJECT:* THE SWISS ALPS 120

IX. *PROJECT:* A LITERARY CONTEST 136

X. *PROJECT:* THE FARM 157

XI. A STENOGRAPHIC REPORT OF A COLLEGE HISTORY LESSON 166

XII. A STENOGRAPHIC REPORT OF A SIXTH-GRADE HISTORY LESSON 176

CHAPTER PAGE
XIII. A TYPICAL YEAR IN A FREELY ORGANIZED PRIMARY ROOM 187
XIV. *PROJECT:* THE DEPARTMENT STORE 198
XV. *PROJECT:* THE OWL DRUG STORE 206
XVI. *PROJECT:* AN EXCURSION TRAIN 218
XVII. *PROJECT:* THE CITY MARKET 225
XVIII. *PROJECT:* THE BUILDING OF A COMMUNITY . . . 229
XIX. SOME DANGERS GROWING OUT OF THE PROJECT METHOD 237
XX. THE OUTLOOK FOR THE PROJECT 243
XXI. SUGGESTIONS FOR PROJECTS 246

APPENDIX

A BOOK LIST FOR INTERMEDIATE-GRAMMAR GRADES . . . 253

INDEX 257

INTRODUCTION

In attempting to formulate any new plan of procedure it is wise to set up certain principles and standards by which the work is to be guided. These principles and standards should be based on, and lead toward, the final aim of education.

This calls for some statement as to what we consider to be the ends of education. Dr. Briggs says, "Schools are for the purpose of training children to do better the desirable things that they are going to do anyway and to stimulate the children to want to do more desirable things than they otherwise would do."

What are some of the "desirable things" children are going to do? By what means shall we evaluate school activities? Tradition is responsible for many of our present-day activities and for much of our schoolroom procedure. Much of the subject matter taught and many habits formed in the schoolroom do not conform to desirable social life in the outside world. For instance, we tell children in school that they must neither help one another nor receive help from anyone. Each pupil must sit up straight in his own seat and attend to his own task. If anyone receives help he understands that he is committing against the school a crime for which he may be punished.

On the other hand, we expect children when they are grown up to assume a helpful attitude toward their fellow beings in society. They will be expected to be thoughtful and considerate of others, to make donations to the poor and needy, to contribute largely to charitable institutions, to be considerate of the rights and privileges of others. In life we want coöperation and teamwork. Good citizenship means self-government with due regard for others; hence we shall include desirable conduct in our list of "desirable things" children are going to do if they are to be good citizens.

Again, one's education should be defined in terms of his ideals, hopes, aims, aspirations, prejudices, jealousies, etc., as expressed toward his fellow beings. The message of our public schools to democracy is "self-government with due regard for others."

We do not condemn a person for being ambitious; in fact, we commend him. But suppose that in the realization of his ambition he tramples down the rights and privileges of another, what have we to say about his ambition? We express our appreciation of his ambition in terms of his conduct toward others.

Again, it is the business of education to create situations most favorable for acquiring habits of right conduct.

Kilpatrick says: "The ideal citizen of a democracy is one who is master of his fate, who, with deliberate regard for a total situation, forms clear and far-reaching purposes, who plans and executes with nice care the purposes so formed. The man who habitually so regulates his life with reference to worthy social aims meets at once the demands for practical efficiency and of moral responsibility. . . . Education considers moral character as primarily an affair of shared social relationship, the disposition to determine one's conduct and attitude with reference to the welfare of the group."[1]

Dewey says: "It is the business of education to cultivate deep-seated and effective habits of discriminating tested beliefs from mere assertions, guesses, and opinions; to develop a lively, sincere, and open-minded preference for conclusions that are properly grounded; and to ingrain into the individual's working habits methods of inquiry and reasoning appropriate to the various problems that present themselves. No matter how much an individual knows as a matter of hearsay and information, if he has not attitudes and habits of this sort he is not intellectually educated. He lacks the rudiments of mental discipline. And since these habits are not a gift of nature; since, moreover, the casual circumstances of the natural and social environment are not enough to compel their acquisition, the main office of education is to supply conditions that make for their cultivation. The formation of these habits is the training of mind."[2]

To what extent are children concerned with discriminating tested beliefs from mere assertions, guesses, and opinions, to what extent do they feel concerned for conclusions that are properly grounded, and to what extent are they acquiring good methods of study?

These questions will be discussed more fully in a later chapter. Suffice to say here that very little thought is given on the part of either teachers or pupils to the ingraining of these traits.

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[1] Dr. Kilpatrick, The Project Method.

[2] John Dewey, How we Think, p. 28.

Again we quote from Dewey: "The skill at the ready command of intelligence is the skill acquired with the aid of intelligence; the only information which, otherwise than by accident, can be put to logical use is that acquired in the course of thinking."[1]

F. B. Pearson says: "Democracy is commonly thought of as a form of government, but, primarily, it is not this at all; rather it is a spiritual attitude. 'As a man thinketh in his heart, so is he.' The form of government is an outward manifestation of an inward feeling, but the feeling necessarily precedes and conditions the outward form. If people all have the feeling of democracy, a democratic form of government is inevitable. The great task before the homes and the schools, therefore, is to generate this feeling, and now is a most opportune time for this important work. People are more neighborly and more kindly disposed toward one another than ever before. The old lines are being broken down and people are coming to think that, in a large way, each one is his brother's keeper. We are coming to estimate people by what they are and what they can do, rather than by what they have, and this is making for a higher plane of sympathy and good will. The teacher does well, therefore, to inquire how she may best use the studies of the school to generate the feeling of democracy, so that when the boys and girls emerge from their school life democracy will be so thoroughly enmeshed in their consciousness that it will be as much a part of them as their breathing. Hence no teacher ever needs to apologize for saying that she is teaching democracy by means of history, geography, grammar, and civics."

[1] John Dewey, How we Think, p. 53.

When the spirit of these quotations permeates our conception of the purposes and aims of education in a democracy, we shall have better standards for judging school procedure. We have always taught and emphasized the importance of liberty and freedom in a democracy. Every foreigner who comes to our shores comes with a magnified conception of what are to be his rights and liberties in free America. While we do not wish to minimize this fundamental principle of American government, we do believe that the time has come when we must insist that with liberty there must be a corresponding obligation to society, that with freedom in a democracy there must be a corresponding duty toward humanity.

Most people today believe that we should be especially concerned with training our children in conduct which will make them better social beings in a democracy. This does not mean that children are not to be trained in the school arts. It does mean, however, that we are confronted with the question, How are we going to teach reading, writing, arithmetic, history, geography, etc., in such a way that the child will be trained in the kind of conduct which we expect of all social-minded citizens in a free democracy?

Part One of this volume sets forth some of the more fundamental laws and principles that should control and direct school activities if the highest aims of education are to be realized; Part Two consists of definite concrete illustrations and discussions of the application of these laws and principles to classroom activities.

THE PROJECT METHOD IN CLASSROOM WORK

PART ONE. BACKGROUND

PRINCIPLES AND LAWS

NATIVE EQUIPMENT

While it is not the intention of the author to enter into a psychological discussion of man's original instincts and native capacities, yet it seems wise to call to mind the native equipment upon which we hope to base much of the classroom procedure in connection with the "project method."

Norsworthy classifies man's original instincts into social and nonsocial responses. "Social instincts, those whose exercise depends on the presence and behavior of other human beings": (1) parental behavior and its allied tendencies of kindliness and sympathy; (2) gregariousness; (3) desire for approval and display; (4) rivalry; (5) imitation; (6) play; (7) sex behavior. "Nonsocial instincts, those which manifest themselves in situations made up of material objects": (1) general physical activities made up of movements of gross bodily control, vocalization, visual exploration, and manipulation; (2) food-getting and food-hunting; (3) teasing; (4) ownership and collecting; (5) fighting; (6) fear; (7) curiosity.

Man is provided from the first with these ready-made responses to certain stimuli, and his education must reckon to a large degree with these tendencies.

Native capacities are manifested in interests shown and in the ease and rapidity with which learning takes place. A gifted child is one who shows special interest in and marked ability to learn specific things.

> Few, if any, original tendencies are absolutely useless, few are so acceptable that they can be retained just as they are. The vast majority of them need to be modified, higher pleasures substituted for lower, certain elements eliminated by withholding the situation that calls them out, when they will perish from disuse, or by following their manifestation with pain and discomfort of some kind, fixing the desirable traits or phases or elements by rewards or satisfaction.[1]

Native tendencies vary greatly in relative strength in different individuals and with various periods of life in the same individual. Furthermore, because of home conditions or outside environment, we often find children in school with certain native tendencies overdeveloped and with certain other native tendencies underdeveloped. Again, it will be noted that many strong native tendencies are at variance with the principles of democracy. Autocracy throughout the ages has been busy suppressing human instincts and desires. Democracy itself means a turning loose of these instincts and desires, and a transfer of the power of control from autocratic state authority to the individual. The safety of true democracy will depend upon the extent to which its individuals subordinate native tendencies and desires to the principles of democracy. Inhibition of certain native tendencies, the modification of other native tendencies, and the acquisition of new tendencies constitute education for democracy.

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[1] Norsworthy and Whitley, Psychology of Childhood.

EDUCATION

The modification of man's native equipment constitutes his education. This modification may manifest itself along three separate and distinct lines: (1) the knowledge acquired must take a prominent place in the process of one's education; (2) certain habits or skills likewise must be acquired; (3) the attitudes or ideals acquired cannot fail to claim a prominent place. These three results of education are written here in the inverse order of their importance.

A most natural query for the school to raise in this connection is, How is the curriculum (subject matter) to function in these three aspects of education?

Knowledge

In the first place, the curriculum should furnish certain knowledge and information that will be useful in doing the desirable things that our children are now doing and will do later in life. This knowledge and information should be looked upon as material for the ready command of intelligence, based upon native inheritance. By this we understand that native ability consists in the sum total of latent native powers with which an individual was originally endowed.

Since education consists in additions, inhibitions, and modifications of these original native tendencies, we should base our selection of subject matter upon the degree or extent to which the knowledge and information furnished promises to be of service in securing desirable present and future conduct.

HABITS AND SKILLS

In the second place, the subject matter of the curriculum should result in the establishment of certain habits or skills on the part of the learner. So long as knowledge remains in the mind of the individual as mere knowledge, it has not reached its highest degree of service to society. It is the business of education to present great truths (the curriculum) in such a manner that they become dominating and controlling forces in the everyday conduct of the individual as he mingles in society.

The following story will serve to illustrate the point in hand: "I receive my grocery bill, and upon examination I find that the grocer has made a mistake. The amount of the bill is ten dollars, while it should be eleven dollars. What shall I do in the matter? Shall I accept the groceryman's statement as final and, by excusing myself on the grounds that it was the groceryman's mistake and not mine, send him a check for ten dollars and say nothing about the error? Or shall I call the grocer's attention to the error and send him a check for eleven dollars? It is altogether likely that I could 'get by' and be one dollar ahead. However, after debating the question in my own mind for some time and recalling my knowledge of right and wrong and justice to my fellow beings, after searching my mind for principles of right conduct drawn from my Sunday-school lessons and other similar sources, I finally decide to do the square thing, rectify the mistake and pay the full amount."

Contrast the foregoing with the man in a similar situation who, without stopping to debate the question as to what should be his conduct in the matter, without having to bring to bear his knowledge of right and wrong on the situation, immediately takes steps to rectify the mistake. In other words, he unconsciously has put into his conduct, in accordance with the laws of habit, what he knows as to honesty and dishonesty. This man does not have to stop and bring into consideration his knowledge of what constitutes honesty. This knowledge has been reduced to habit of conduct.

A music teacher gives one of her pupils a new piece of music to learn to play on the piano. The pupil looks through the music, determines the key in which it is written, studies the position of the notes on the staff; in other words, he proceeds to make himself acquainted with the musical information represented on the new sheet. Then he endeavors to execute his knowledge of the piece on the piano, and we say that he is practicing his music. He is trying to reduce to habit the arm and finger movements in order that he may render music that is pleasing to the ear. Until he has reduced these movements to habit the music rendered is not enjoyable. In fact, neighbors listening to the music during the process of practice may become tired and even complain of the noise to which they are subjected. The pupil hesitates, often striking wrong notes and causing discords during this process. His mind is occupied in trying to put into operation the knowledge which the piece of music conveys to his intelligence. It is necessary for him to apply all his energy and thought to the task in hand. He must concentrate his attention to the execution of his knowledge and cannot, for a moment, allow his mind to be occupied by any other topic. However, if he is ever to make music, it will become necessary that his arm and finger movements be reduced to habit so that he does not need to put forth effort in executing his knowledge of the piece. He may be able to produce most beautiful music and at the same time be able to carry on a conversation with a friend. In other words, so long as the pupil is compelled to draw consciously on his knowledge of the music and to use consciously this knowledge in the direction of his movements (conduct), he is subject to mistakes, discord, and lack of harmony; but when the knowledge of the piece has been reduced through practice to automatic conduct, beautiful, harmonious, pleasing music will result.

In a similar manner the knowledge acquired in the study of the school curricula should be reduced to habits of conduct; otherwise the conduct of a person with an unusual amount of knowledge and information may result in social discord, unhappiness, and even a criminal life.

Attitudes and Ideals

One's attitudes and ideals are strong factors in the control and modification of his native tendencies; hence the important place attitudes and ideals have in education for democracy. Knowledge and skill become dangerous weapons in the hands of one with faulty attitudes and corrupt ideals. A man's ideals concerning honesty may determine whether or not he uses his knowledge of science, mathematics, or the industrial markets in such a way as to take undue advantage of his business partner. His ideals of what constitutes social life may be a stronger factor in determining his conduct than is his financial income. His ideals, rather than his financial income, may regulate his conduct relative to the purchase of automobiles or the joining of golf clubs, etc. His ideals concerning law, order, governmental control, may determine whether or not he uses his scientific knowledge and skill in making and placing explosives in Wall Street or hurling them at persons in positions of authority.

The extent and way in which a person's knowledge functions in conduct relative to integrity, industry, and justice are determined by his ideals and attitudes toward his fellow beings.

The curriculum, then, should be judged by the extent to which it affords opportunities for fixing desirable attitudes and ideals for true democracy (see "Democracy," on page 27).

DRIVE, OR INNER URGE

It will not be amiss to give some thought and consideration as to the *forces* that propel and direct the activities of children in school life. For the most part this *drive*, or propelling force, is or has been in the teacher. In a large measure he decides not only what the children are to do, but also when they are to do it, and just how they are to do it. He is supposed to control and direct minutely all the major activities of his school. He is the one who, for the most part, passes judgment, makes decisions, and gives direction to the whole school. The children's part is to listen, take orders, and obey directions. A pupil's deportment and progress are often estimated upon the extent to which he willingly conforms to this condition. This training tends to create within children "a maximum ability for taking orders and a minimum ability for self-direction."

There is no intention here of criticizing the teacher who plans well what is to be done and how it is to be done; neither do we wish to limit or restrict his judgment and decision. We do, however, criticize seriously the ways and means used in executing his plans, judgments, and decisions. We wish to criticize the way and extent to which the laws of learning and laws of habit formation are utterly disregarded in much of our schoolroom procedure. These laws will be discussed in another section of this chapter.

Learning takes place most economically and most effectively when the drive, or propelling power, is within the child. The skill of the teacher, then, rests in creating and manipulating situations in such a manner as to transfer this drive, or motive power, to the pupil. We may well ask the question, Wherein does the genuine "inner urge" of a child lie? In seeking to transfer this drive from the teacher to the pupil, upon what must the teacher depend and upon what particular personal traits or characteristics of the child should he rely?

We are told by some of our most advanced thinkers in this field that the springs of human action, the impulses and motives that sustain mental and bodily activity and regulate conduct, are somewhere within the limit of our native inheritance.

> The human mind has certain innate or inherited tendencies which are the essential springs or motive powers of all thought and action, whether individual or collective, and are the basis from which the character and will of individuals and nations are gradually developed under the guidance of the intellectual faculties. . . .

> The instinctive impulses determine the end of all activities and supply the driving power by which all mental activities are sustained; and all the complex intellectual apparatus of the most highly developed mind is but a means toward these ends, is but the instrument by which these impulses seek their satisfaction, while pleasure and pain do but serve to guide them in their choice of means. . . .
>
> Take away these instinctive dispositions with their powerful impulses, and the organism would become incapable of activity of any kind; it would lie inert and motionless like a wonderful clockwork whose mainspring had been removed or a steam-engine whose fires had been drawn.[1]

Woodworth, in his discussion, seems not to agree with McDougall in the extent to which "native instinct" originates mental and bodily activities. He says:

> The fact is that the infant is responsive to a great variety of stimuli, and that he is "driven" very largely by the stimuli that reach him from outside. . . . It is true, as a general proposition, that as the individual grows up, his actions are more and more controlled by inner drives rather than by the immediately present stimuli.[2]

From the foregoing quotations it would seem that both outside stimuli and native tendencies may initiate the drive (motive power) in an individual. Our query is, How are these two sources of drive to be related one to the other, and how are they to be regarded by the teacher? To what extent should the teacher use artificial stimuli? To what extent should he motivate work without regard to the native equipment of the children?

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[1] McDougall, Social Psychology.

[2] For a fuller discussion see Woodworth's "Dynamic Psychology."

A child may be spurred on to greater efforts in his studies by appealing to his self-pride, by means of competition with his classmates, or through his curiosity. However, such motives are not likely to carry the child very far in a line where he finds nothing intrinsically interesting. For example, a child may be induced by some such means to make a start in learning to sing, but unless he has some natural musical gift he drops out soon and parries further appeals.

A music supervisor recently sought to interest some fifty thousand school children in listening to and appreciating good music. An expert in teaching music from the standpoint of "listening to" and "appreciation of" good music was brought into the city to help with this musical project. The children throughout the schools met these experts and were instructed in the art of listening to music. Great movements in the history of the development of music and musical instruments were presented to the various grades, from kindergarten to high school. Children were guided in listening to phonograph records. They listened to records of great symphony orchestras, were told of the various instruments used, and learned to recognize many of these instruments from the record.

A symphony-orchestra association was formed in the city and was backed by nearly all the clubs and civic organizations. Five orchestra concerts were to be given. Tickets were on sale in every school building. All children holding tickets were to be excused from school on afternoons when a matinée was held. An unusual interest was worked up in the city at large, both in school and out of school. The first concert was recently held with remarkable success in both attention and attendance.

Now, what was the drive which caused so much interest and urged so many to attend this concert?

Some went because others were going; some were curious to see the musical instruments they had been told about; some were interested in having greater percentage of attendance than some other room; some went because the teacher wished a good showing; and so on through a long list of different motives. Moreover, an atmosphere was created in which all were unconsciously stimulated more or less in favor of attending these musical concerts.

It is clear that the drive, for the most part, was some stimulus, or motive, other than a natural, inherited gift for listening to a symphony orchestra, and that if no outside stimuli had been present, the attendance by the children as well as by the grown-ups would have been comparatively small.

But will these same stimuli, or motives, hold over and furnish the drive for the next concert? It will be a safe guess that they will not, unless followed up in the meantime by a renewing of the old stimuli or a creating of new stimuli and new interests, which, beyond doubt, will be done in this case.

But how are we to evaluate and judge the results of all the strenuous effort recently made in this city by this new music supervisor? She is succeeding admirably in exposing thousands of children and grown-ups to good orchestral music. She is doing much to put them in the right frame of mind toward learning to listen to good music. She has done much toward furnishing a favorable situation; but the final result is to rest upon the native musical capacities of each individual, upon the extent to which the drive is transferred from the artificial stimuli, or motives, originally used to a genuine desire for and pleasure in listening to the orchestra. In proportion as the drive is eventually transferred from the artificial stimuli to natural musical abilities, in that proportion is the undertaking a success. In this connection it might be well to add that "that kind of conduct is most artificial which needs the strongest external stimuli to produce a response, and that is most natural which needs the least external stimuli to produce a response."

In the light of this discussion is a teacher justified in using artificial motivation as a means of securing a drive in school work? If so, what is to aid and guide him in the choice of stimuli to be used? Any stimulus that will provide activities tending to awaken desirable, native impulses, thereby transferring the source of the drive from the original artificial source to a true, genuine drive based upon natural impulse, is to be considered legitimate. An adequate understanding and appreciation of this relation of the sources of the drive should be of inestimable value to a teacher, not only in selecting stimuli and in motivating school work but also in aiding him in determining and directing school procedure in such a manner that desirable native impulses and abilities of children will be drawn on more largely than they usually are.

I once visited a fifth grade when the children were reading from a geographical reader, one child reading aloud to the class while the others kept the place in their books and looked for mistakes. The pupil reading happened to read the statement that in France sugar is made from beets. This seemed to be a new thought to one of the boys in the room. In surprise and astonishment at the statement, he spoke out while the girl was continuing her reading, "How could they make sugar from beets?" The teacher's answer was, "James, keep still and don't ask so many questions."

Of course the teacher could not permit pupils to speak out in this manner without due regard to others; consequently she supplied a stimulus intended as a drive to induce this boy, and perhaps others who heard, not to be so rude and inconsiderate in the future. Now, what native instinct did her stimulus tend to arouse which might perhaps furnish a drive in the boy on future occasions? This particular case resulted in arousing the instinct of fighting, teasing, or bullying. Why could she not have tactfully furnished some other stimulus that would have appealed to a more desirable native impulse, such as the desire for praise, the spirit of coöperation, etc.? In this particular case the teacher acted upon her own impulse in total ignorance of the fact that the boy's original native impulse would have anything to do with his reaction in the future, and also in ignorance of the fact that throughout his four or five years of school life this particular boy had had his native impulse for fighting, teasing, and bullying played upon by such stimuli as she was using. This pupil had grown to be a slow, bad, troublesome boy. I often wonder to what extent teachers, through their ignorance of the sources of the motive power in children, are responsible for the development of their own problems in discipline.

When a teacher says, "If you don't do better, I shall demote you," or "I shall fail you," or "I shall send you to the principal," or "I shall keep you after school," etc., what native instincts or impulses in the child are likely to be aroused? Will it be a native tendency that is likely to drive in the desired direction, or will it be a native impulse that will drive the child in an undesirable direction? In one case pride and desire for praise may be aroused and supply the drive for more industrious study. In another a feeling of injustice and abuse may arouse the instinct of fighting, thus supplying a drive, or "inner urge," for conduct so well known to many teachers.

It is the business of the teacher, then, to create and manipulate such situations (stimuli) as will stimulate and react upon certain desirable native tendencies, and to see that this reaction is followed by pleasure and not by annoyance to the learner (see page 7). All other things being equal, any plan (method) of accomplishing this should meet the ends set up in this discussion on drive, or "inner urge." More definite consideration of methods of procedure will be found in Part Two of this volume.

LAWS OF LEARNING

The roots of the conduct of man are in his native equipment in terms of neurone[1] connections and neurone behavior which, in definite situations, are ready to act. These neurone connections are often called connecting "bonds." Some of these connections, or bonds, are ready-made (inherited). To quote from Kilpatrick, "The infant cries (responds) when he is very hungry (situation acting as stimulus)." Other bonds are acquired, as when the hungry child later asks in words for food. The process of acquiring or otherwise changing bonds we call learning. The careful statement of the conditions under which bonds are built or changed constitutes the "laws of learning."

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[1] The neurone constitutes a single unit of nerve matter. It has been estimated that there are about eleven thousand million neurones in the nervous system of the human adult. Each neurone is made up of a central portion called the cell body, from which grow out two different processes. The longer of these two processes is called the axone and ends in a number

The first law of learning is called the "law of readiness." This means that when a bond is ready to act, then to act gives satisfaction or pleasure, and not to act gives annoyance or displeasure. Conversely, when a bond is not ready to act, then to act gives annoyance or dissatisfaction, and not to act gives satisfaction or pleasure. A child may be hungry and ready to eat; then to eat good food gives satisfaction, but not to eat gives annoyance. Or he may not be hungry and not ready to eat; then to eat gives annoyance, but not to eat gives satisfaction.

The second law of learning is called the "law of effect." This means that if the action of a modifiable bond results in satisfaction, the bond is strengthened; if it results in annoyance, the bond is weakened. To the extent that satisfaction is present, learning takes place.

The third law of learning is called the "law of exercise." This means simply that modifiable bonds should repeat acts or satisfaction, so that habits or acts will become fixed. This law covers the field of drill in the school arts. Exercises in repeating the fundamentals are given in abundance

of branches, known as the end-brush. The other is called the dendrite; it likewise ends in branches, which are somewhat like a shrub.

Two neurones are joined together by the dovetailing of the branches of the dendrite process of one neurone with the end-brush of another. This point of contact is known as a synapse. The tendency for a sensation to pass from one neurone to another through the synapse is called the bond which exists between these two neurones.

in school work; but the essence of this law, "satisfaction," is often woefully lacking, while the negative factor, "annoyance," is present. This accounts for the dislike children so often have for the formal drill work in school, and explains, likewise, the poor results so often following long periods of drill.

It is the business of the teacher to create and manipulate situations in which these fundamental laws will operate most economically and most effectively in the process of learning. This calls for a careful examination of the ways (method) by which school situations are managed.

The degree in which the laws of learning manifest themselves is dependent upon the strength of satisfactions or annoyance following the response. The desire to do a certain thing is in direct proportion to the anticipation of pleasure in doing it. Conversely, the desire not to do a certain thing is in direct proportion to the anticipation of displeasure in doing it.

Now, wherein and how do these laws fit into school activities? To what extent do children get pleasure out of the activities connected with school work, and to what extent do they realize annoyance and displeasure? Just how do these conditions manifest themselves in the ordinary daily classroom activities? Does each of the forty-five children in a particular schoolroom really wish to answer the questions propounded by the teacher, or would many of the class really prefer to let someone else answer? Why do so many children leave school or wish to leave school before completing their elementary education? A study of two hundred and fifty thousand adolescent youths in New York City who had left school before eighteen years of age revealed the fact that only 15 per cent withdrew from school because of economic conditions. The results of this survey showed that 85 per cent of these young people could have finished their high-school education if only their desire to remain in school had been as strong as their desire to leave school. Evidently the laws of learning are yielding a negative result, so far as school work is concerned, where pupils desire to leave school before their high-school education is completed.

Another element which is often overlooked enters into this whole question of learning. We may visit a certain school and find almost all the pupils apparently enthusiastic over the subject that is being taught. They wave their hands frantically in the air as they try to attract the teacher's attention, and show disappointment when they are not called upon. Now this situation is quite desirable and is to be commended. However, let us carefully examine just what is taking place and wherein the laws of learning are functioning. In the first place, the children are enjoying certain satisfactions resulting from their responses to the teacher's questions. Now just wherein does this satisfaction lie? Is it owing to the fact that they have learned a new bit of information that brings joy and pleasure, or to the fact that they have met the situation in which they were placed in such a way as to get the approval of the teacher? Evidently satisfaction results from the fact that they have pleased the teacher, and consequently there will be a tendency to repeat the act in similar situations. This anticipated satisfaction is so great that some children are quite willing to remain indoors at recess to study, in order that they may have facts about the lesson which will "pass muster" with the teacher. As was stated above, this is a very desirable situation, and there is no intention on the part of the author to criticize it unfavorably. However, it is a knowledge of the subject matter that should furnish the satisfaction if the learning of the subject is to be accomplished most economically and most effectively. In the one case the subject matter has served its purpose when the pupil has learned just enough to "get by" successfully. At times, if a teacher happens to be kind and considerate, a pupil can "get by" with very little definite information, the teacher realizing that the pupil has a good attitude and that he will do almost anything his teacher asks. Of course the child is learning in accordance with the laws of learning, but the term often applied to his pretense of knowledge is *bluffing*. As conclusive proof of this point, just let the teacher do something that angers a certain boy, and see how quickly his changed attitude toward his teacher affects his responses. Of course this is nothing more than what we should expect.

The question, then, is how to transfer the focal point of this learning from the teacher to the subject matter in hand; how to bring about such a situation that the center of gravity is removed from the teacher to the objectives of education, to the end that learning be shifted to these aims and objectives.

This question is concerned with method of procedure; and the discussion of this phase of the subject is postponed, to be taken up with the project method in Part Two of this volume.

THINKING

There can be no question as to the important part "thinking" plays in the process of learning. Consequently some consideration should be given to those conditions which control this mental activity. We are often confronted with the assertion, "Children are not trained to think." As a matter of fact, children do think; the ability to think is a part of their native equipment. The roots of thinking have their origin in these native powers. Hence we cannot say that we teach children to think. "A being who could not think without training could never be trained to think; one may learn to think *well*, but not to *think*."[1] The foundation of thinking is in the child's native equipment; therefore the teacher is concerned with directing inherited powers and not with creating powers. Dewey speaks of thinking as a "multitude of ways in which specific things, things observed, remembered, heard of, read about, evoke suggestions or ideas that are pertinent to the occasion and fruitful in the sequel. Training is such development of curiosity, suggestion, and habits of exploring and testing as increases their scope and efficiency. Any subject is educational in the degree in which it succeeds in effecting this growth."[2]

The chief business of the teacher is to provide and manipulate situations which make for the permanent improvement of "observation, suggestion, and investigation." This involves the whole question of methods, and furnishes the basis by which to select and evaluate methods of procedure in school work. Likewise it should be the controlling

[1] Dewey, How we Think, p. 29.

[2] Ibid. p. 46.

factor in the selection and evaluation of subject matter. "Accordingly, any subject, from Greek to cooking and from drawing to mathematics, is intellectual, if intellectual at all, not in its fixed inner structure, but in its function, in its power to start and direct significant inquiry and reflection."[1]

Dewey discusses the profuse and varied use of the term *thought* under four heads or types of thinking. In the first type he includes all "idle fancy, trivial recollections, or flitting impressions" that pass through the mind at random, with no sequence of ideas. In the second type he restricts thinking to "matters not directly perceived through the senses, . . . successions of imaginative incidents and episodes," in a somewhat more connected order. The "imaginative stories" of children or something invented without reference to truth or facts are illustrative of this type of thinking. This type of thinking may approach some of the elements of reflective thought, but ignores truths or facts in the process. Such thinking does not claim to result in knowledge. The third type differs from the second in that "thought denotes belief resting upon some basis, that is, real or supposed knowledge. . . . It is marked by acceptance or rejection of something as reasonably probable or improbable." The validity of the truth or facts upon which thinking is based may or may not be duly considered. Tradition, imitation, likes and dislikes, personal interests, each comes in for its share of responsibility in this type of thinking. The fourth and highest type of thinking consists in "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusion to which it tends." This is termed *reflective* thinking.[1]

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[1] Dewey, How we Think, p. 39.

While there is a common element in all four types of thought, yet it is evident that the relative educative value culminates in the last. Notwithstanding this fact, it is equally evident that most school procedure provides more largely for the second and third types.

One of the factors of reflective thinking is the creation of a doubt, perplexity, or uncertainty to such a degree as to initiate an "act of search or investigation directed toward bringing to light further facts which serve to corroborate or to nullify the suggested belief."

Finally, "It is the business of education to cultivate deep-seated and effective *habits* of discriminating tested beliefs from mere assertions, guesses, and opinions; to develop a lively, sincere, and open-minded preference for conclusions that are properly grounded; and to ingrain into the individual's working habits methods of inquiry and reasoning appropriate to the various problems that present themselves. . . . The formation of these habits is the training of mind."[2]

The second part of this volume is devoted to concrete illustrations of classroom procedure where the spirit of the above quotations is provided for in a large way. The purpose of this discussion is simply to get before us the part "thinking" has in education in order that we may base the discussions in Part Two upon it.

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[1] For a fuller discussion of this subject see Dewey's "How we Think."

[2] Dewey, How we Think, p. 28.

LAWS OF HABIT FORMATION

In a former section "habit" was discussed in relation to its value and setting in the educational process. It remains simply to recall at this time the general laws or conditions under which desirable habits are fixed. Strayer and Norsworthy say, "Habit is a tendency to do, act, or think as one has done, acted, or thought." The original nature of man which makes this tendency possible is the plasticity of the nervous system, especially the synapses.[1] Because the original plastic condition of the synapses registers every act or thought, certain permanent changes take place, as an act or thought is repeated, in the synapses concerned with doing, acting, or thinking. Hence the possibilities of habit formation are due to physiological rather than mental characteristics. This process of bringing about a permanent change constitutes learning or habit.

It is through this avenue of habit formation that knowledge and information reach their highest service to mankind. All ideals relative to desirable characteristics of both the individual and the group are to be reduced to habits of conduct. Dr. W. W. Charters lists some forty desirable characteristics that should function in a democracy: habits of honesty, industry, neatness, carefulness, courtesy, economy, generosity, thoughtfulness, persistence, self-control, tact, etc.

Of course habits formed in harmony with the deepest instincts and desires are easily formed. But many habits desirable in a democracy are counteracted by some deep-seated instincts and selfish desires; such habits are not likely to be formed unless they are started and continued through an appeal to the emotional and intellectual side of the individual. In this manner the intellect aids in determining what desirable habits are to be initiated, and strengthens the will in continuing their practice or exercise (see "law of exercise," on page 17) until the bonds connected with these particular responses have been strengthened. This again emphasizes the importance of right attitudes and ideals and their relation to desirable habits of conduct in a democracy.

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[1] For synapses see note on page 16.

The teacher is vitally concerned as to the most economical and most effective way of reducing these characteristics to habits of conduct. The two great laws of habit formation are (1) the law of exercise and (2) the law of effect. The law of exercise is a statement of the conditions under which the changes in the synapses are strengthened by means of repetitions. The law of effect is a statement of the conditions under which the change in the synapses of the nervous system results in pleasure or displeasure for the individual: if pleasure results, the tendency to repeat an act or thought is strengthened, and habit formation or learning follows; if annoyance or displeasure results, the tendency to repeat is weakened, and in a corresponding degree habit formation or learning is thwarted.

As in the case of memory, the methods to be employed for the most economical operation of the laws of habit formation are so closely allied to the methods used in connection with thinking and to the laws of learning that further consideration of this question will be postponed to be taken up again in Part Two in connection with the project method.

MEMORY

The purpose here is simply to get before us a conception of what should be the true setting of memory in the process of education. To begin with, memory is a gift of our native equipment, depending upon that physiological structure of the nervous system known as the synapses of the cortex.

This tendency to recall previous mental responses is a highly variable quantity, resulting in what is termed *a poor memory* or *a good memory*. However, the original potentiality of the synapses is constant and subject to no change. But this varying tendency to recall is due to the extent of change brought about in the modifiable synapses by the original response. The extent or degree of change in the synapses is conditioned, in turn, upon the attitude of the individual toward the response and the situation supplying the stimuli. The attitude, then, of the individual is one of the essential factors, if not the chief factor, in raising the degree of retentiveness to the maximum of his or her original capacity. Obviously, then, it becomes the business of teachers to supply conditions most favorable for those attitudes that make for this sort of memory training. What are some of the conditions that tend to control one's attitude toward situations? In what field is a teacher to look for materials and forces with which to surround his pupils in order that he may create such desirable situations?

In the first place one's attitude might be defined in terms of the interest he takes in a situation. Genuine, wholehearted interest manifests itself in the drive and reflective thinking present and pertinent to the occasion. The same conditions, then, that lead to reflective thinking lead also to better retention. In training memory one must rely upon the training of reflective thinking. McMurry says, "In other words, memorizing then becomes a by-product of thinking, instead of a substitute for it."[1]

Better methods of training memory are to be realized through better methods of thinking.

Yet when we analyze much of our schoolroom procedure we are astonished by the extent to which teachers create situations whereby children rely wholly upon memory.

A consideration of methods for the strengthening of memory is so closely allied to the methods for the improvement of reflective thought and for the use of the laws of learning and habit formation that further consideration of this phase of the question will be postponed to be taken up again in Part Two in connection with the project method.

DEMOCRACY

School procedure should provide ample opportunity for the development of those characteristics most essential for citizenship in a democracy. Teachers have always recognized the fact that education should prepare for citizenship, but until recently little thought has been given to ways and means by which children may receive specific training in this all-important phase of education.

Teachers have always taken advantage of every opportunity to impress upon the minds of the children those high ideals of conduct so desirable in a democracy. These opportunities usually come in way of stories in which there is a moral; of good literature in which high ideals are pictured; of ethical talks or exercises especially prepared to reveal to the pupils desirable characteristics; of incidents, in school and out of school, of both desirable and undesirable conduct. There is no desire to criticize this procedure nor to question the motives and good intentions of teachers. However, we do wish to point out the fact that a very important element of learning is too often omitted. Whether or not ideas about desirable characteristics ever become habits of conduct is left, for the most part, to chance. The teacher proceeds upon the theory that what is said in the presence of the pupils or what passes through their minds finds lodgment in the memory. We may go a step farther and, basing our procedure upon the old truth that "children learn to do by doing," require (even force) them to conduct themselves in accordance with those precepts of right conduct so desirable in a democracy. A situation is soon created in which the teacher assumes the entire responsibility for desirable conduct on the part of forty or fifty children. The school soon accepts this situation, especially if it is made up of what are commonly supposed to be good children. Children who rebel against this leadership by the teacher are usually termed *bad*. In this situation the "learning to do by doing" is robbed of the essential element of learning. The drive is in the teacher and not in the children, who remain, for the most part, passive but obedient.

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[1] For a complete discussion of memorizing see McMurry's "How to Study."

The laws of learning require that bonds must not only be willing to act but must be ready, in the sense of desiring, to act on the individual's own initiative.

In passing, it might be said in this connection that herein lies a great weakness in much of our school procedure, not only in the learning of those characteristics desirable in a democracy, but also in the learning of the school arts or fundamentals. How are we, then, to create situations in which desirable characteristics will be reduced to habitual conduct on the part of children?

Certain educational institutions in various sections of the country have been for some time experimenting along this line with varying degrees of success. Most of these are private institutions in which the authorities are free to break away from traditional school procedure. Here educational procedure conforms more nearly to the conditions of life, and should result in the formation of desirable habits which will carry over into life. The government of such schools is more of a democracy and less of an autocracy. This situation has been sought, in some instances, by means of some form of "student self-government." Here, again, the results have varied. In one instance the student body was conducting an election of officers in a certain high school. The excitement ran almost as high as it does in our national presidential elections. Heated arguments could be heard about the halls as to the merits of the respective candidates. On counting the ballots after the election it was found that more votes had been cast than there were students in the high school. The ballot box had been stuffed, and the citizens of this democracy in embryo were learning the tricks of cheap politics. There can be no question that the laws of learning and habit formation were in full operation in this election. The motive power (drive) was in the school and not in the teachers.

Learning followed, but for the time being at least it appeared to be the learning of undesirable characteristics. Hence it is the business of the school not only to create a democratic situation but also to control and direct affairs to the end that right ideals and standards are selected by the pupils on their own initiative; that pupils judge, plan, and execute well on their own initiative for the success of all phases of the school life; that the student body feel keenly the burden of success based upon high ideals of what constitutes success.

This again raises the question of method of procedure, a discussion of which will be postponed here to be taken up in Part Two in connection with the project method.

PART TWO. PROJECTS ACTUALLY WORKED OUT IN CLASSROOMS

CHAPTER I

UNITS OF SUBJECT MATTER

Let us now apply to some of our common schoolroom methods of procedure the standards and principles set up herein, for the purpose of determining to what extent they provide favorable situations for the most effective and economical operations of these fundamental principles.

Let us take the following geography lesson as a basis of consideration. A fourth grade consisted of forty bright children. It was evident that they loved and adored their teacher, for each pupil seemed anxious to please the teacher by measuring up to his expectations. Each child sat up straight and seldom took his eyes off the teacher during the entire recitation. The lesson was on southern Europe. "What is the capital of France?" the teacher asked. Quick as a flash nearly all the pupils raised their hands, indicating willingness to answer. The teacher called on a pupil. "Paris," was the given answer. "Where is it located?" All hands were up instantaneously. The teacher again designated someone to answer. "On the Seine River," came the reply. "For what is Paris noted?" And so on. Thus the lesson continued for thirty minutes, the teacher asking definite questions on the location and importance of the principal cities, rivers, and mountains in France, Italy, Switzerland, Spain, and Portugal. Then questions based on the occupations of the inhabitants of each country were asked and answered; the principal products of each country were called for; the form of government in each country was included. In fact, it seemed that nothing of importance in connection with the geography of southern Europe escaped its share of questions and answers. Almost every pupil volunteered to answer each question. There were only three or four instances where an incorrect answer was given, in which case the question was passed quickly to another pupil. The questions and answers were short, snappy, and in rapid succession. Little time was lost by reason of halting or hesitating on the part of either pupils or teacher.

In judging the worth of this geography lesson one should know something of its relations to preceding lessons which led up to it, also something of the aims and purposes of the teacher in conducting the lesson. This lesson was simply a review of work that had been previously covered in class, some three or four months having been occupied in the study of the countries upon which the pupils were questioned at this particular time. Now if the teacher was simply taking this way for the purpose of checking up and testing the results as to what and how many facts previously studied remained at the command of the pupils, well and good. In this event he was not aiming at educational advancement in this particular lesson, but rather at taking an invoice of work that had been done in the past. If this geography lesson was given for the same purpose that we give at various intervals Monroe's "Reading Test" or Courtis's "Arithmetic Test," simply as an aid in judging progress in content alone, then it would be considered legitimate. No claim for educational advancement is made for the lesson,—only in so far as its results might reveal certain weaknesses or strong points in previous work, thereby indirectly leading to better planning and better methods of school procedure.

On the other hand, suppose that this type of question-and-answer lesson is the usual manner of procedure with this teacher: the geography lesson for tomorrow consists in finding the answers to twenty questions at the end of the section on France. Tomorrow's recitation consists in the teacher's asking each question and the pupils' giving the answers they have learned in the period of preparation. Or a history lesson of five pages is assigned and prepared for a recitation during which the teacher questions and cross questions the pupils upon the facts related therein, all upon the same dead level as to importance. Or an arithmetic lesson is assigned in which pupils are to work on paper and hand in the next ten problems in the book or to solve problems furnished on the blackboard. In the recitation period the pupils exchange papers and grade them as the teacher reads the correct answers. These daily grades are to be used at the end of the term as a sole basis for the promotion or failure of each pupil. Or a grammar lesson in the eighth grade is assigned, consisting of a study of adverbs. A few days ago the author visited an upper-grade room where the teacher had placed half a dozen sentences on the blackboard. The children were to pick out the adverbs in each sentence and tell what each modified.

Now we do not claim anything new or striking about these citations of schoolroom procedure; in fact, they are typical of what is going on in thousands of schoolrooms in all parts of the country. For that reason we have selected these typical examples, to which we now shall apply the standards and principles as set forth in the first pages of this volume.

It has been emphasized time and again that good teaching consists in creating and manipulating such situations as will provide for the training of children in the desirable things that they are now doing or are going to do in the future, situations most favorable for the economical acquisition of knowledge, habits, and attitudes essential in a democracy.

Now note the situation in which the class was placed when the teacher asked the question "What is the capital of France?" There is just *one* thing the pupil can do. If he does anything but answer "Paris," he is wrong. There is no opportunity for "judging, planning, or executing" on his part. There is no place for reflective thinking (see "Thinking," on page 21). The pupil relies solely on memory. Inner urge is lacking (see "Drive, or Inner Urge," on page 9), the pupil being satisfied when he gives the correct answer to the teacher. The real drive is in the teacher, and the pupil is satisfied with any kind of answer that will meet his approval; beyond this he has no concern for the success of the recitation. The "factors of study" are almost entirely thwarted. The "specific purpose" is to satisfy the teacher; there is no possible way of supplementing the thought of the author, of organizing ideas, or of judging the general worth of the facts in hand. Finally, there is no place for the initiative or individuality of the class in meeting the conditions confronting it.

In general, the same may be said when we analyze the situation in which the class finds itself in the history assignment "Stand and tell me about the surrender of Yorktown." The efforts of the pupil are, for the most part, directed toward recalling the words of the paragraph in which he read this account. The chances are that he images the very page on which it is printed, sees the side-heading, and takes the first word of the first line for his cue. Thus he proceeds to go through the entire paragraph or that portion which deals with the surrender of Yorktown. His success or failure depends upon the degree to which he is able to reproduce the words, or at least the thought, of the paragraph. He gives little or no attention to the relative values of the facts rehearsed. It is clear that he is depending upon sheer memory (see "Memory," on page 26).

Moreover, there are no provisions made in the arithmetic assignments, as cited above, for the operation of the laws of learning or the laws of habit formation. The assignment of the lesson on the adverb, without doubt, would result in a situation in which the operation of the principles underlying the learning process would be woefully thwarted.

While the facts presented in this discussion are not new to many of our more thoughtful teachers, and while considerable advancement has been made here and there in overcoming the weaknesses here set forth, yet in most schools there is ample room for great improvement in this regard.

One of the chief causes for the shortcomings in the above illustration is the small size of the unit of subject matter in the question. The teacher asks, "What is the capital of France?" The pupils answer, "Paris." The next step depends entirely upon the teacher; he determines what shall be its relation to the last assignment. He may ask, "Where is it located?" or he may choose some other assignment (question). The pupils give no thought or concern to the next move.

We have always gone on the assumption that if the pupils once repeated or learned all the isolated facts about southern Europe or the isolated facts in history or technical grammar, they would of course be able to fit them in their proper relations into a whole. We have utilized the old principle "from the simple to the complex," or "from the elements to the whole." These fundamental truths have guided us in our early educational thought. As to whether or not simple elements ever take shape in a related whole has been left, for the most part, to chance, and experience has proved beyond doubt that isolated, disconnected facts learned apart from their relation to a whole, seldom, if ever, are at the ready command of intelligence.

It is frequently stated that a person learns by merely having the qualities of things impressed upon his mind through the gateway of the senses. Having received a store of sensory impressions, by association or some power of mental synthesis he is supposed to combine them into ideas—into things with a *meaning*.

An object, stone, orange, tree, chair, is supposed to convey different impressions of color, shape, size, hardness, smell, taste, etc., which aggregated together constitute the characteristic meaning of each thing. But, as a matter of fact, it is the characteristic use to which the thing is put, because of its specific qualities, which supplies the meaning with which it is identified. A chair is a thing which is put to one use; a table, a thing which is employed for another purpose; etc. The difference between an adjustment to a physical stimulus and a *mental* act is that the latter involves response to a thing in its *meaning*, while the former does not.[1]

It is the business of the teacher to furnish situations wherein pupils will respond to the meaning of things rather than to things as isolated, disconnected facts. The logical conclusion is that we should assign larger units of subject matter for children to work upon, units large enough to embrace a number of allied and related facts or interests that must be investigated, analyzed, or worked out in order to satisfy the inquiry or need suggested by the unit of subject matter. During the last twenty-five years considerable progress in this regard has been made in some of the school subjects. Note the steps of progress in the teaching of primary reading. Many of us can recall how we first learned the letters of the alphabet. Then we put two letters together thus: *ba*, *be*, *bi*, *bu*, etc. Then we added other letters and made words. From single learned words we formed sentences. This was called the alphabet method. Some twenty years ago the word method came into common use in teaching beginning reading. A single word was the unit instead of a single letter. A little later the sentence method came into use, and the child started by reading a whole sentence. Then each individual word in the sentence was picked out and learned. At the present time we even start the beginner in reading with a whole stanza of four or more lines. Then we find the individual words and teach them in connection with their meaning in the whole stanza. In other words, instead of starting with the smallest possible unit (fact) and building up to the whole, we now begin with a larger whole and by analysis arrive at the smaller but related parts.

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[1] Dewey, Democracy and Education, p. 35.

The same thing has happened in the kindergarten. Instead of spending a week or two on each of the occupations and leaving it to chance whether or not the conception of a true, coöperative, interdependent community is formed, we now start out by building a community out of blocks, etc. The home of the farmer, the blacksmith shop, the grocery, the church, the schoolhouse, and all the principal interests of a community find place in this larger unit. In this manner each individual occupation is learned in its relation to the whole community.

A similar change has been wrought in the teaching of penmanship. Formerly our point of attack was the single slanting straight line, next the left curve, then the right curve, etc., until all the elements could be made accurately. Then these single elements were joined by points or turns, and letters were formed. Then words were formed from letters, and, finally, whole sentences were assigned for practice in penmanship. Today, however, a child from the first will write in a large, bold hand a letter or possibly a whole word or even short sentences, thus using a larger unit than formerly.[1]

This same principle, "from the simple to the complex," or "from the elements to the whole," still dominates most classroom recitations throughout the country. Take, for example, the geography lesson cited above. The pupils responded glibly to all the facts suggested by the teacher's question as isolated, independent facts, memory being the dominating mental activity. There was a minimum of responding to the *meaning* of facts, hence a minimum of reflective thinking (see "Thinking," on page 21). Instead of habits of inquiry and investigation being formed, quite the opposite resulted. One boy had been sent to the board to make a drawing illustrating how on one side of the mountains there was an abundance of rain and consequently vegetation, while on the opposite side there was a desert. The drawing was copied from the geography text. The pupils had no difficulty in telling the story illustrated in this drawing: how the mountains robbed the clouds of their moisture on the one side, so that by the time they were over the watershed they had no moisture for the opposite side of the mountain. A casual observer would have been impressed by the intelligence of the class with respect to this particular feature of the lesson and all its related parts. However, a visitor who happened to be present asked, "How do the mountains rob the clouds of their moisture?" After some hesitation one of the boys explained that the winds blew the clouds against the mountains and that the rocks and rugged cliffs tore them open and let all the water out. The class accepted this explanation without question. They were next asked the question "What is a watershed?" This term had been used frequently in connection with the lesson just recited. One of the children stated that he believed it was a large shed built of iron upon the mountains in order to hold the water for irrigation during the summer months. This statement was corrected by someone who said that he thought the shed would be made out of concrete instead of iron. This seemed to satisfy the class. Now the point is this: the children were in the habit of responding to the facts *as found in the text*, and not to the *meanings* of the facts. Herein lies much of the weakness in school work. This is not in condemnation of individual teachers; in fact, this is the way the great majority of us have been teaching all our lives. It is the traditional way, and no particular teacher is to be blamed.

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[1] For a more extended discussion of this phase of the topic see Parker's "General Methods of Teaching in Elementary Schools," chap. v.

In attempting to overcome this weakness, at the present time we are seeking the larger unit in the organization of subject matter, in all grades from the kindergarten to the high school. This tendency is finding expression today in a type of activity termed *the project*. In this method we are seeking to present desirable subject matter in a way that will call for the meaning and use of facts and that will at the same time provide situations for the operation of all the principles and laws set forth in Part One of this volume.

CHAPTER II

THE PROJECT

We now find ourselves confronted with the all-important question, How can the teacher provide situations in which to give practice in a maximum number of desirable traits or characteristics for citizenship in our democracy? In this connection let us point out some of the more desirable traits or characteristics that count for good citizenship, and set them up as our goal. These will serve as standards and guides in determining and directing our methods of procedure and in measuring the results attained.

A very prominent and successful business man was once asked what he considered to be the greatest assets for success in the business world. His answer was, "Integrity, industry, and intelligence," named in order of their importance. We accept these, but we shall add a few other desirable characteristics for good measure, such as principles of democracy (initiative, self-reliance, respect for leadership, coöperation, and due regard for others), adaptability in meeting new and strange situations, loyalty to carefully-thought-out and accepted principles, a sense of responsibility for the success of the group, and the ideal and spirit of service. Our method of procedure, then, should include ample opportunities for practice in these desirable traits or characteristics under conditions most favorable for reducing them to habits of conduct. In order that these habits of conduct may be carried over most effectively into life, they should be acquired under situations as nearly like those in real life as possible (see "Habits and Skills," on page 6). Again, if desirable learning and habits in this respect are to be obtained most economically and most effectively, the methods of procedure must provide conditions for a wholesome operation of the laws of learning (see "Laws of Learning," on page 16).

The subject matter (curriculum) should be of such a nature that it may be readily adapted by the pupil to those situations in the life of a democracy in which he finds himself. This will also serve as a standard for the selection of subject matter (see "Education," on page 5) and in the determining of worth-while projects.

An effort to meet and satisfy the spirit of the discussion given thus far in this volume is finding expression at the present time in what is termed *the project method*. There seems, however, to be no commonly accepted conception of the exact meaning of this method. Each individual has his own notion of what constitutes a project. Many of the so-called projects are nothing more than topics assigned by the teacher, the pupils simply looking up information and reporting it to the class, nothing more coming from it except the commendation of the teacher in the giving of good grades. Many teachers are using what they call the project method, with a total absence of the essence and spirit for which we are striving in this new method of procedure.

Throughout this volume the term *project* is used to indicate the larger unit of subject matter, while the term *problem* has reference to the individual questions and difficulties arising in connection with the solution of the project. In other words, the solution of the projects consists in solving certain problems or answering certain questions which lead to the solution of the project.

Let us now try to formulate some conception of a method of procedure which will give ample provision for carrying into effect the foregoing principles of democracy in harmony with the laws of learning. In school a curriculum should furnish suitable material with which children are to work. This means that a radical change must be made in the old traditional curricula; a new organization must provide larger units of worth-while subject matter in order to make possible the realization of the aims and principles under discussion.

This unit of subject matter (call it a project if you will) should grow up out of some social situation or individual experience, the solution of which should result in genuine satisfaction to the individuals or individual working it out. This calls for much thought and planning on the part of the teacher. He cannot afford to stand about and wait for something to happen in order to start a project. He should be on the alert and ready to take advantage of every opportunity for the launching of genuine projects. So far some of the best project work we have seen had its origin in some new and strange situation that suddenly appeared before the class. It would seem that there could be no definite, specific rule laid down for starting a project, since a definitely prearranged plan, if followed, would certainly work out in a formal, mechanical way, thus missing the spirit of the project. Hence the teacher finds himself in this paradoxical situation: if he plans too well, he will miss the mark; and if he does not plan at all, he will accomplish nothing. What advice shall we give him?

At our present stage of progress it would seem wise to take a middle ground. The teacher may think through rather carefully what he might call a pre-plan for what he hopes will develop into a genuine project for the children; he may write out a list of the native instincts (see Part One, p. 3) that he hopes to arouse in the individual members of his class; he may list the materials that he thinks will be used by the children in the solution of the project; he may anticipate some of the problems and queries that the children will be likely to raise; he may write out some desirable things to be accomplished in the working of this project. Such planning may be a legitimate procedure on the part of the teacher. Success or failure depends upon the degree in which the project becomes the children's project, upon the extent to which they enter into it wholeheartedly, upon the degree in which the laws of learning operate. The results all hinge on the skill with which the teacher launches the project. If it is successfully done, it is altogether probable that the project will grow and widen in scope as the work progresses; it may even take a turn in some other direction from that which the teacher had planned, and it may accomplish even more than he had hoped. A project conceived by the teacher, be it ever so attractive from his standpoint, is not a project for the children until they enter into it because of a personal interest and a genuine satisfaction to be enjoyed in its solution. Thus we see that the teacher's proposed project may or may not become a project for the children. The spirit of the children is the determining factor.

A college professor once worked out what he considered would be a good project on South America for a sixth-grade geography class. His proposed project was, "Why should the United States be more interested than the European countries in the development of the natural resources of South America?" He listed the main physical features of South America that he thought the children would probably learn in answering this question. The principal cities with their locations would be learned, and the climatic conditions would, no doubt, be an important factor, as well as the various countries with their inhabitants and forms of governments. In fact, it was hoped that the children would become acquainted with the geographical conditions of South America through this proposed project.

A sixth-grade teacher was asked to work the project out with her pupils. She soon found, however, that she could not launch it, as worded, with her class. The best she could do was to assign topics upon which the children would hunt information and then relate it to the class. This they did willingly and to the best of their ability. But the drive was in the teacher, and the children were working for her and not because the project had any intrinsic interest for them. This is exactly what goes on in most school work. It would have been a mistake for the teacher even to assume that her children were working on a project, for the essence of a project was lacking.

The teacher, however, soon found a way of launching or raising a genuine project in connection with the study of South America. It happened in this way: someone raised the question "Why should we be interested in South America?" This led the pupils to enumerating the products shipped from South America to their own city. It was then suggested that the children find out all the different products that reached their city from South America. During the next two or three days different children brought samples of several such products and told about them. Then it was decided to make a larger collection and, in connection with a sand map of South America, to give an entertainment for the class of normal students who were studying methods of teaching in the training-school. Thus the real project for the children began to take on the form of an activity, something tangible, the planning of a creditable display of articles of their own collection, with suitable and entertaining information about South America. This led to a lively search for material in their geography text and to trips to the library for books; groups went to various wholesale and retail dealers for information about products and to the rubber factory, grocery stores, and drug stores. The whole class spent an afternoon going through one of the largest wholesale grocery houses in America. If this project had been written up after it was finished, it would have made as good a showing as the project on Africa given in Chapter III of this volume. In summing up it was found that all the topics listed in the professor's proposed project and many more besides were thoroughly covered by the class. In addition the children were working wholeheartedly and in a situation where the principles of democracy and the laws of learning were in operation.

The following form, which has also been used as a guide for writing up projects after they have been finished, has been useful as a guide in working out a pre-plan for project work.

First, the project should be some big question or unit of work which has grown up out of a social situation or personal experience, the solution of which is carried on in a social situation in harmony with the laws of learning.

1. *Statement of the project.* The project should be worded in such a way as to suggest certain satisfactions that its solution will bring to the children who are to work it out, thus utilizing the law of readiness and the law of effect (see Part One, p. 17). In this connection it might be wise to note certain worthy or desirable native instincts that can be aroused or played upon by various satisfactions resulting from the solution of the project (see "Native Equipment," on page 3).

2. *The teacher's aims. a. Ultimate:* the ultimate aims should include the more general aims of education that are the common results of most school activities, such as certain habits of study or conduct, and general attitudes.

b. Immediate: the immediate aims should include more definite and specific aims, such as mastering the specific thing in hand.

3. *Materials.* A classified list should be made of all the materials and sources of information used or to be used in connection with the solution of the project. These should be so selected and organized that they will lend themselves most readily to the procedure under 4.

4. *Procedure. a. Raising or launching the project.* This should include a statement of how the project was or is to be raised or launched, and should make clear the manner in which the children came or will come to a realization of a need for its solution. This is the time when the teacher's proposed project should be transferred to the

pupil's project (pupil's aim). This is the time when the wording of the project takes on the form found under 1 above.

b. Exploration. The exploration will result in the raising of problems[1] or queries in connection with the solution of the project. These problems or queries should be worded in such a way as to arouse in the minds of the pupils the elements of reflective thinking, curiosity, perplexity, confusion, doubt, etc. They should grow out of felt needs arising in connection with the project, and their solution should contribute toward the successful solution of the project. In this connection it might be wise to note certain native instincts that were or may be aroused by each problem or query.

Under this heading activities of the children should be listed: how they are to work, whether in class, in groups, or as individuals; the necessary trips to local institutions, libraries, museums, industrial institutions, public buildings; how to collect materials; the drill in the school arts necessary for the success of the project; the necessary research, judging, organizing, executing, etc.; and the sharing of experiences with the group in a social situation, which constitutes the socialized recitation (see under "The Socialized Recitation," on page 238).

5. Finally, the teacher should have some definite plan for judging the project. Was it educational? Was it of genuine interest to the children? Was it worth while? What school arts were learned? Were the aims accomplished? Were desirable habits being formed?

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[1] For the distinction between project and problem see under "Problem Project," on page 240.

Worth-while projects will involve the *use* of the facts required in their solution, thus revealing the meaning of these facts in their true relation to life.

> A false psychology has led some people to suppose that one learns by merely having the qualities of things impressed upon his mind through the gateway of the senses. . . . But as a matter of fact, it is the characteristic use to which the thing is put, because of its specific qualities, which supplies the meaning with which it is identified.[1]

This proposed plan for a logical organization of project work psychologically worked out by children may be reduced to a more simplified form as follows:

1. *Statement of the project.* The project should be stated in such a way as to suggest certain satisfactions that its solution will bring to the children who are to work it out, thus utilizing the law of readiness.
2. *The teacher's aims*
    a. Ultimate
        (1)
        (2)
        (Etc.)
    b. Immediate
        (1)
        (2)
        (Etc.)
3. *Materials*
    a. Texts and supplementary literature.
    b. Newspapers and magazines.
    c. Personal experiences.
    d. Pictures, maps, etc.
    e. Construction work: wood, clay, sand, etc.

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[1] Dewey, Democracy and Education, p. 35.

4. *Procedure*
    - *a.* Raising or launching the project.
    - *b.* Exploration, or the raising of problems or queries necessary for the solution of the project, and the activities of the children involved in the solution of these problems.
    - *c.* The sharing of experiences with the group in a social situation (see under "The Socialized Recitation," on page 238).
5. The teacher's estimation of the worth-whileness of the project.

The launching of a project in such a manner that its solution will be of genuine, intrinsic interest to the children is a difficult matter and requires much thought and skill on the part of the teacher. A thorough understanding and appreciation of the laws of learning (see Part One, p. 16), the principles of democracy (see Part One, p. 27), and the aims of education (see Part One, p. 5) should aid the teacher in this task. In the first place, he should recognize the fact that desirable abilities on the part of children are of gradual growth. A child's attitude toward project work, his ability to organize material, to judge relative values of material, to plan and execute, are all acquired through practice; practice, however, in harmony with the laws of habit formation (see Part One, p. 24). A teacher who insists upon a finished, logical organization of a piece of work from elementary-school children is likely to force a situation in which the spirit of the project is thwarted. In order to realize a perfect ideal of logical organization the teacher must of necessity direct minutely all activities of the children in connection with the organization of the work. It is true the results may show better organization; but too often it is the teacher's organization, with the spontaneity of the children and the spirit of the project totally lacking. The teacher should display as much skill in developing ability and power of organization of subject matter on the part of the children as he displays in developing other abilities; that is, he should not work out a pupil's problems in arithmetic for him, but he should make pertinent suggestions that will aid the pupil in doing the thing he is already trying to do. If it becomes absolutely necessary for the teacher to tell the pupil every step to take in the solution of a problem in order to reach the correct answer, this should mean that the problem is beyond the present ability of the pupil. It then becomes a question of subject matter or classification of pupils, or perhaps one of method of teaching. As the children advance through the successive stages of development we should expect increasingly finer distinctions to be made in the organization of subject matter, for these distinctions come about most readily and most effectively under the operation of the laws of learning.

What is said here relative to the organization of subject matter applies equally well to the development of ability in all other factors of study, judging, planning, executing. The key to the most effective solution of the teacher's problem in this connection is a specific purpose in the minds of the pupils; such a situation affords a most favorable opportunity for tactful guidance and natural growth.

The type and nature of project work should vary with the increasing abilities and change of attitudes of the children, and should conform somewhat to the physical, mental, and moral characteristics of the three stages of child development: the transitional period, from five to eight years of age; the formative period, from eight to twelve years of age; and the adolescent period, from twelve to eighteen years of age.

During the first period the play instinct is prominent, and should be utilized in much of the project; while in the second period the collective instinct, the creative instinct, the desire for manipulating materials, and the desire for approval and show are rather prominent, and project work at this time should appeal strongly to these natural tendencies. At a later period this collective tendency takes on the form of collecting and possessing the more substantial things of life, such as wealth or knowledge. At this time an intellectual challenge is more readily accepted.

Consequently we should expect to see a change in the type of projects given to a class of children as they pass through these different stages of development. In the kindergarten-primary grades we should find such projects as (1) "To build a doll house in which the children are to play"; (2) "To plan and to give a puppet show for another primary grade"; (3) "To build a whole community out of blocks in the kindergarten." In the intermediate-grammar grades we should expect such projects as (1) "To make and place in relative positions on a large sand map of Africa representations of jungles, people, animals, and other features of interest found on that continent and to make African life better known to another class of children"; (2) "To give an American Legion reunion: reminiscences of France, pictures and souvenirs, and an entertainment"; (3) "To make and collect articles for a Japanese matinée in connection with the study of Japan to be given for the edification and pleasure of another class."

In the adolescent period we may expect the project to be more of the intellectual type and less of the play or show type. More individual projects are always likely to arise here; that is, a boy becomes interested in learning all about motors as he constructs one for his new motor boat; another boy becomes interested in finding out all about the raising of potatoes in order that he may reap a larger return from a garden plot his father has given him for the summer. Even solving a difficult problem or question may bring genuine satisfaction to some pupils. The curve of desire for scientific investigation rises abruptly during this period. The underlying principles of science and literature, however intricate; will become exceedingly fascinating to most young people if they are presented in harmony with pedagogical principles.

It is the business of the teacher to take into account all these native tendencies on the part of children in the planning of project work throughout the school life of the child. Otherwise he may be "driving spikes with a tack hammer and tacks with a sledge hammer."

In the working out of class projects the activities of the pupils usually follow a more or less definite plan of procedure. Sometimes the children will work in groups; sometimes during the class discussions one of the members may act in the capacity of a presiding officer; and at other times leaders may direct certain activities. However, it should be understood that these different ways of procedure in the solution of the project do not constitute the project and therefore should not be substituted for it in the minds of teachers. These activities should be an outward manifestation of an inner urge resulting from a felt need on the part of children for the solution of the project. The visible activities of the pupils during the process of working out a project should show merely the most economical and effective way of solving that project. This means that different projects will be worked out in different ways. The end to be met at each successive stage of development should determine the next step in the process.

Oftentimes a teacher will fall into a certain definite plan of procedure with nearly all the school work. He may try to use the group plan on every occasion, or he may go to extremes with the plan of having a "pupil presiding officer." This may mean that the teacher has adopted the project without its essence or spirit. He has taken the means used in the solution of genuine projects and has made them an end in what he terms *project work*. He is forcing the mechanical side of a project in the absence of any genuine one. This is one of the dangers to be avoided in project work.

CHAPTER III

PROJECT: A SAND MAP OF AFRICA

This project, which grew out of the study on Africa, was finally worded thus: "To make and place in relative positions on a large sand map of Africa representations of jungles, people, animals, and other features of interest found on that continent and to make African life better known to another class of children." As to how the wording of this project grew into this form see "Procedure," on page 56.

THE TEACHER'S AIMS

Ultimate. (1) To train for wise and effective citizenship; (2) to give proper attitude toward life; (3) to develop habits of quick, clear, rational thinking—children testing their own thoughts and the statements of others; (4) to inculcate in the schoolroom and in the children principles of democracy; (5) to train for leadership and group cooperation; (6) to lead children to the evaluation of their own ability and to the determination to live up to their greatest possibilities.

Immediate. (1) To educate through much use of the "school arts"; (2) to establish such principles and generalizations in geography as will function in life; (3) to give opportunity for the development of initiative and originality, also to bring out the best traits of individuality which go to make strong personality; (4) to give mental concepts of life in the jungles, on the desert, and in semi-arid regions; (5) to give a rational knowledge of Africa.

MATERIALS

The following materials and sources of information were utilized in the working out of this project:

Maps: Atwood's "New Geography, Book Two"; Rand McNally's Physical Map; Progressive Series World Map; Project-Problem Outline Map of Africa.

Geography reading: Allen; Chamberlain; Carpenter; Atwood; Smith's "Commerce and Industry"; Crissey's "Story of Foods"; "World Book"; "Wonder Book"; "Book of Knowledge"; Andrews's "Seven Little Sisters."

Magazines: National Geographic Magazine; Saturday Evening Post (see Maud Radford Warren's article in the issue for June, 1920).

Literature: Bible stories; Laboulaye's "Quest of the Four-Leaved Clover"; Roosevelt's "African Stories"; biographies of Stanley and Livingstone; Kipling's "Just-So Stories" and "Jungle Book," I, II.

Material for handwork: sand, saws, quarter-inch basswood for animals, wire, paper (green and cream for palm trees); clay for sphinx, pyramids, dam, etc.; twigs, cotton, sponges; green paint for jungles; green grass for fertile spots.

PROCEDURE

Situation. While looking in geographies for pictures of animals to help in making a circus-parade border for the room, the children raised the query, "Why is Africa called the Dark Continent?" It was decided that it was because of its barriers, namely, dense forests, lack of navigation, and the great desert, making the interior hard to explore.

A SAND MAP OF AFRICA

Plans were suggested and discussed for making Africa better known to the class and to other children in the school. It was finally decided to make representations of things found in Africa and to place them on a large sand map.

About this time the class was asked to give a demonstration lesson for the Geography Section of the State Teachers' Association. It was decided that the lesson would be given on some feature of the map project.

RAISING OR LAUNCHING THE PROJECT

In the working out of any large project certain problems will arise, the solution of which will contribute toward the complete success of the project. These problems should consist of obstacles, difficulties, or inquiries which grow out of and have a direct bearing on the solution of the project; consequently the drive in the problems should have its roots in the final solution of the project and in the satisfaction that accompanies this (see "Drive," on page 9). Curiosity is often a strong factor in raising problems which will start desirable efforts toward the solution of the project. However, curiosity may lead to topics foreign to the project and result in disconnected and unrelated efforts; but if the project is very plain in the mind of the child and his purpose is strong enough, he will put these *associate* responses aside to be followed up when the present enterprise is completed. If the *purpose* is strong enough, the child evaluates and selects the problems pertinent to the working out of the project. It is the business of the teacher, by means of questions and suggestions, to direct all efforts toward the main issue, the fullest possible realization of the solution of the project in hand.

During the development of this project a small sand table (3′ × 4′) was used, and only one section of Africa at a time was represented on it (forty-seven children seated in the room left no space for a large sand table). At one time the Sahara Desert was illustrated, showing everything connected with this region. At another time an oasis, with all its features, was represented. At another time the jungle region was shown. Thus all the different features and life peculiar to Africa were worked out and illustrated in connection with the various problems which arose. The culmination came when all these different features were to be put in their proper places on the large sand map, at which time the work was to be observed and enjoyed by many visitors. Thus the work of each day contributed something toward the success of this final red-letter day for the children (see photograph of the completed project).

Note how the following problems and queries have a direct bearing on the final success of this project.

PROBLEMS

Problem 1. How large should the map be, and in what proportions? The width of the room was chosen by the children for the length of the map (21 feet). A study of related distances from the equator to the Cape and from the equator to the northern extremity was worked out. Distances from the twentieth meridian to the east and west boundaries were found. These distances were reduced to feet. All the class worked on these problems.

Problem 2. How should the sand be placed on the map? Should it be level? Where should the highlands be placed? A physical map was studied and interpreted. The entire class studied the surface, finding the general elevation to be from three thousand to four thousand feet. The following highlands were represented on the small sand table: the Atlas, Abyssinia, Kilimanjaro, and the Drakensberg.

Problem 3. What could be made to be placed on the map? Texts and supplementary books were read, and a list compiled of things found in Africa which could be represented on the map: elephant, camel, rhinoceros, hippopotamus, snake, cattle, giraffe, horse, sheep, lion, tiger, monkey, ostrich, jungles, oases, palm trees, apricot trees, wells, irrigation dams, pyramids, sphinx, obelisk, diamond mine, gold mine, ships, jungle homes, flags, the inhabitants native to the different regions, etc.

Problem 4. What flags should fly over the map? Study of the African possessions of European countries was made by the entire class. Countries were outlined on the small sand table. Something of the history of the territories and of their acquisition by European countries was learned. European flags and pictures of flags were brought. A group made flags for the sand map. Study was made of the disposition of German territory to England, France, and Belgium. The flags were made of drawing-paper 2″ × 1½″. They were colored with crayons and glued to toothpicks to stand on the map.

Problem 5. How large should things be made? The necessity for a standard of measurement was realized. The palm tree was selected by the children to be the standard. It was to be made one foot high, and everything else was to be made in proportion (lessons in arithmetic followed, using ratio and proportion in working out the height of the camel, the sphinx, etc., in proportion to the palm tree).

Problem 6. How should the great northern half of Africa (the Sahara Desert) be represented? Study of the desert brought out the extent, the cause for the desert, the winds, the soil, the climate, and the fact that a desert is not a hot, flat sandy expanse, but that it has cool nights, hills, also some rain. Oases were studied: the cause, the importance, and also what would be found in them. Caravan routes were traced. The question how best to represent an oasis was taken up. A group of girls made the palm trees. To make the trees a piece of wire about a foot long was fastened to a two-inch square of wood. The wire was wrapped with cotton, then stiff, buff wrapping-paper half an inch wide was wrapped round and round over the cotton. Palm leaves were fashioned from green paper and secured at the top. Clay was placed over the base to hold the palm tree.

Another group planned to represent the oasis life: people, industries, irrigation, etc. A French flag was made to fly over the desert.

Problem 7. Who are the desert people, and how are they to be represented on the sand map? Study was made of the desert people. A group of boys was selected to make the Bedouins and their tents out of wood and cloth. Patterns were drawn, and quarter-inch basswood and turn saws were used in making the Bedouins.

Problem 8. Should all northern Africa be represented as a desert? Study of a vegetation map revealed the fact that north of the Atlas Mountains and in the Nile valley were fertile fields under cultivation. Algeria and Morocco were studied. On that part of Morocco shielded by the snow-capped Atlas Mountains, the cool breezes from the Atlantic were found to be the cause of the most delightful climate of northern Africa. Industries were studied. (Generalization: Marked improvement can be made in an uncivilized country by civilized people, especially by means of travel, transportation, and methods of farming, modern conveniences, the telegraph, the telephone, and motor cars.) A group of children planned to represent this on the map. Small aëroplanes were made and railroads laid; green sawdust represented the fertile fields of Morocco.

Problem 9. An oceanic climate explains the possibilities for agriculture in Morocco. How is civilization in the Nile valley made possible? How can it be shown on our map? The following subproblems grew out of this problem:

1. From study in the supplementary readers the children found that the rise and fall of the Nile, fertilizing the soil and supplying water for irrigation, made civilization possible in this valley.

2. What causes the overflow? The headwaters of the Nile were located, the causes of the seasons were reviewed, and the shifting of the equatorial belt was studied. (This is a splendid opportunity for teaching physical geography: monsoons, the earth's rotation, and the way in which the inclination of its axis causes the seasons.) Through desire to know the cause of the flooding of the Nile by heavy rains falling in Abyssinia during our northern summer, a felt need was created.

3. It is said that a man can stand with one foot on cultivated soil along the Nile and with the other on the desert. How can this be true? The study of the distribu-

tion of silt along the Nile and of the irrigation of fields was made and illustrated on the sand map.

4. What leads us to believe that Egypt is an old country? References to the land of the Nile in Biblical writings were found. History from early times down to the present government of Egypt as a British protectorate was studied. Bible stories pertaining to Egypt were told in the class.

NOTE. Geography is the story of man and the earth. It is earth-determined. In studying the history of Egypt man's response to geographical influence is emphasized. In preparing to tell the Bible stories silent reading for a definite purpose was accomplished. In telling the stories organization of subject matter, judging what to tell, selection and use of language, provided opportunity for English as a school art.

5. What can be shown on the sand map, and how, of the products raised in Egypt? (Distinction was made between fertile and desert Egypt.) Cotton was noted, its amount and quality. Other products were studied; imports and exports were learned. A group made ships to show what was brought to and sent from Egypt.

6. How can the old methods of irrigation along the Nile be shown? Two boys planned to make of clay and wood a representation of the old method of irrigation. Other boys made representations of the more modern methods, showing dams, canals, wells, and pumps. Clay was used to make the Aswan Dam. Man's adaptation to his environment and his response to geographical influences is a basic principle in geography. It is the teacher's business to lead pupils to make such deductions. Such deductions may not be of genuine interest to children, but through the

approach of something that does interest them they grow to interpret geographical facts.

7. What can be put in to show why many tourists go to Egypt? Alexandria and Cairo were represented by using building-blocks. Their location and importance were noted. The delta was shown on the sand table. The pyramids and the sphinx were studied, and a group made them in proper proportions. Clay brought from the river was used for the pyramids, and the artist in the class modeled a wonderful sphinx.

8. Pictures of palm trees and the Nile, with a pyramid in the distance, were made both in pencil and with colored crayon. Desert scenes and silhouettes were cut out of paper. Following a suggestion in the course of study in art, animals of Africa were blocked out and posted on the walls of the room as a circus parade.

NOTE. Eight subproblems were brought out under Problem 9. This shows how minor questions are raised in the solution of the main problem. Problems are found more inspiring than topics, as they not only are more thought-provoking but throw out a challenge to be met, accepted, and worked out by the children.

Problem 10. What material is to be used, and where and how is it to be obtained? Clay, quarter-inch basswood, scroll saws, paper, building-blocks, wire, cotton, green paper to cut up for grass, materials for shipbuilding, trains, track, aëroplanes, etc., were listed. The list was placed on the board, and the children planned to supply everything. Several boys went to the river for clay; others brought scroll saws. Basswood was purchased, school paper was used. The girls brought cotton and wire for palm trees. Wood was brought from home for ships.

Problem 11. Why is it necessary to have caravans crossing the desert? The personnel of a caravan, the routes followed, experiences in the desert, the products carried in and the products carried out, were discussed. Many interesting relations were brought out: the adaptation of plants to the desert, the interdependence of the oasis people and the people of our own country, etc. A group was formed to show the Sudan and to tell what is brought there by the camels and what they carry out.

Problem 12. Why is the camel the animal used in crossing the desert? Much curiosity was aroused in connection with the study of this "ship of the desert." How has he become a product of the desert and how has he adapted himself to desert conditions? Thus, the use of the hump, the camel's ability to store water, his hoofs, his nostrils, and other peculiar characteristics were learned with interest. During the Civil War in our own country some camels were brought from Africa. When they were permitted to run at will, to what kind of country did they go?

The children made camels of basswood, and a group prepared to tell about them. A good generalization was brought out by using Timbuktu as an example of how cities are formed at a break in transportation.

Problem 13. Why do we make the date palm to place on the desert? The answer to this query emphasized the the fact that dates are a product of the oasis and also brought out their use in Africa and in our own country. The whole date industry was studied, including cultivation, picking, packing, and shipping.

NOTE. An excellent opportunity was provided for work in the English class by the use of National Geographic pictures on Africa (obtained from the National Geographic Society, Washington, D.C.). Much was learned from the pictures themselves and from the printed information under them. We are becoming more and more convinced that visual education is of great importance. Children remember what they see. They also learn to interpret geographical relations as seen in pictures. Describing pictures is not only of value in oral English, but it has a moral value. Children learn to tell what they see and to tell it exactly as they see it.

Problem 14. What should be represented in the jungle home? The small sand map was used in planning the jungle home. First, the Congo River was placed on the map, and the problem solved of why a great river and a dense forest were found there. Comparisons were made with South America. The children learned from the geographic pictures about the natives and the animals. Patterns of the animals were cut in proper proportion. The animals, including families of elephants, tigers, lions, giraffes, snakes, and other jungle animals, were made from clay and placed in their home on the sand map. A jungle home was made, reeds woven in and out around sticks being used to make the round wall. A grass top was placed on it for a roof. The following interesting problems came up and were discussed: How do natives of the jungle carry their burdens? Who in the United States carries things the same way? Why are the jungle people there? Etc. Many read accounts of Roosevelt's, Stanley's, and Livingstone's explorations in the jungle. Interesting accounts were given to the group.

Trees were made of twigs and green paper, or of twigs and sponges painted green. Natives, including Pygmies, were made of clay and wood to inhabit the jungle. These activities were worked out by groups of children.

Problem 15. Why was South Africa worth fighting for by the English? This problem introduced the study of South Africa and the preparation for representing it on the sand map. Its value to the English because of ranching, diamonds, ostrich industries, and gold were discussed. A miniature gold mine was made to be placed on the map. A compound, including the diamond mine, the native workmen, and their quarters, was made. Ostrich families were made to be placed on the map. A Boer ranch was represented, and the story "The Outlander" was read.

The Red-Letter Day

The culmination was reached on the day when the class was to give its final lesson on this project before the Geography Section of the State Teachers' Association. One group of children made the large sand map, about twenty feet square, on the floor of a large assembly room. The physical features were all represented in their proper relations. Materials that had been made or collected to illustrate life, both plant and animal, on the various regions of Africa were properly placed on the map. Some of the main features represented were the oases, the desert, the jungle home and life in the semi-arid regions, the industries of South Africa, the valley of the Nile, especially the lower region of the Nile.

The lesson was simply an informal sharing and discussion of the children's experiences in securing information on Africa and in making the map.

The intelligence shown in the use of a large fund of information relative to Africa in this class discussion was the true test of the success of the enterprise. The children's aims are to be defined in terms of the success of the project. The extent to which the pupils have successfully acquired information, judged its relative value, planned it, and organized it, is to be determined by the extent to which it provokes intelligent and thoughtful discussions in these class conferences.

Human interest was supplied by an adaptation to the Sahara of the story from the book "The Quest of the Four-Leaved Clover,"[1] a charming story of the Arabian desert. The Bedouins made out of wood and clay became to the children the tribe of the Beni-Amer. The well which they made and placed on the desert was talked of as the "well of the Benediction." The romance of the story became interwoven with the desert which they were making and in which Abdallah was to live. Time was taken to read the story. The children took turns reading or telling it to various groups. As the story was long, much was done as silent reading. While planning and making objects for Egypt, naturally the interest of the pupils was drawn to the first people that inhabited Egypt.

The jungle became real to them as they made a home for "the elephant's child," with his tall uncle the giraffe, his hairy uncle the baboon, and his broad aunt the hippopotamus. They made the "great grey-green, greasy Limpopo River" for the home of the crocodile and the Kolokolo bird, mentioned in Kipling's "Just-So Stories."

Real letters were written and mailed to friends, telling them of the map. Invitations were written, inviting the mothers to come and hear about it.

[1] By Laboulaye. Published by Ginn and Company.

The poem "Africa"[1] was memorized and greatly enjoyed by most of the children.

One of the strong features of this project was the directness with which every activity contributed toward the final success of the project. Almost every problem or inquiry grew out of the needs arising out of the project.

After the project was under way every child in the room seemed to be working, planning, organizing toward a definite aim. Following this procedure it would have been impossible to chop the school day into separate subjects and separate periods. Needs grew out of the enterprise which required much use of books. Books were used as sources of information to solve the problems, also for enjoyment.

It was found necessary to have much drill. In discussing problems some of the children did not speak plainly. Other children helped them with articulation drills and practice in speaking clearly and plainly. Drills were necessary also in language forms in order to be able to tell about the map in good English. For instance, one boy was telling about the lion. He said, "You must not bother the lion when he is angry; if you do it will make him *more madder.*" The children knew this was wrong, but did not know why. It was suggested that the language books would help them. A lesson in functional English, featuring comparison of adjectives, followed. Many similar lessons were found necessary, the need being realized by the children.

School procedure was carried on, not in teaching subjects, as geography, reading, English, but in doing the thing that was required as the next step in the working out of the project. The pupils were working on a unit of activity which required much use of the school arts to help them to carry on the enterprise. All work for about four weeks, except arithmetic and music, grew out of this project (it was necessary to set aside twenty-five minutes each day for arithmetic, because these children kept books for the school cafeteria and centered arithmetic study around that). The manual-training shop contributed its share in the making of objects to be placed on the map. A reasonable amount of time was consumed in making drawings illustrating physical features or plant and animal life for the map. Penmanship and spelling were motivated in a similar manner. Likewise, some arithmetic was required on problems growing out of the construction of the map, especially problems of proportion.

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[1] By Ferdinand Freiligrath. Translated by K. F. Kroeker.

Thus the spirit of the project finally permeated nearly all the school time and contributed to its success. The "drive," or "inner urge," growing out of a felt need for material, information, and skill, was aroused in the class (see "Drive," on page 9). For complete success, and hence for satisfaction, drill in the use of the tools of learning was motivated, and favorable conditions were supplied for the operation of the laws of learning (see "Laws of Learning," on page 16).

Again, the children were practicing, on a reduced scale, the principles of democracy, such as initiative, self-reliance, coöperation. They were acquiring skill in judging, planning, and executing. They were getting practice in leadership and in the following of properly constituted leaders. They were acquiring right attitudes toward school and school subjects, while at the same time learning well the school arts and good habits of study.

They had worked hard and had created a beautiful product. Their satisfaction was supreme. However, with children the post mortem is short-lived; after the glow of satisfaction they are ready and eager to start something new. This is the way one activity leads to another. The clamor was, "What can we do now?" Many suggestions had been made during the working out of this project which the children were now anxious to carry out.

The following are some of the results obtained through the working out of this project:

Primary results. Silent and oral reading, story-telling, functional English, rational knowledge of Africa, fundamental principles in interpretation of geography, spelling, and penmanship.

Associate results. Desire to read more of Roosevelt, desire to take up more woodwork, ability discovered in many things.

Concomitant results. Learning to coöperate, group leadership, ability to follow, self-respect, pride, inspiration to accomplish something worth while.

It is not to be supposed that these problems came up and were worked out in the exact order that they appear here. It is more than likely that two or more of them were under consideration at the same time by different groups of children. Neither are all the problems and queries that came up in connection with this project listed here. Many of the less important ones have been purposely omitted in order to save time and space. However, enough has been included to show the true conception of a project as it is applied to school work.

CHAPTER IV

PROJECT: A JAPANESE MATINÉE

This project was worked out in one of the summer schools consisting of children from various neighboring school districts who had been assigned to summer school for the purpose of making up work in which they had failed or in which they were deficient. This particular school had been assigned to normal-school students for observation work, and the final lesson in this project was given before a class of some seventy teachers who were attending summer school.

A part of the geography assignment for the fifth grade is the study of Japan. The entire time allotted to Japan (two weeks) was spent in working out the following project.

While the teacher had a general plan in mind from the beginning, his complete plan was not fully realized until the project had been worked out by the children. The following logical organization of the work done psychologically by the children will give some idea of the amount of subject matter (curriculum) covered, including not only information relative to Japan and the mastery of the tools of learning but also the spirit of the class as portrayed in their work. This last element (the spirit) of a project is the all-important element, but it is most difficult to portray on the printed page.

FUJIYAMA IN CONNECTION WITH THE JAPANESE MATINÉE

The project was, "To make and collect articles for a Japanese matinée to be given for the edification and pleasure of another class." Note that the realization and wording of this project by the children did not occur until some time after the study of Japan had been suggested by the teacher. The real project was of gradual development, growing out of the local situation which the teacher skillfully guided into an actual existence in the minds of the children. This situation grew out of school, children, visitors, interesting information, legends, stories, etc., all tactfully and skillfully manipulated by the teacher in harmony with the laws of learning (see Part One, p. 16).

THE TEACHER'S AIMS

Ultimate. (1) To develop a more perfect understanding of international relations between Japan and America and to lead to an appreciation of the value of coöperation and of the maintenance of friendly relations between the two countries; (2) to develop good habits of thought and study.

Immediate. (1) The mastery of the school arts; (2) to obtain worth-while information about Japan and her people; (3) to arouse an interest in Japan and the Japanese people.

MATERIALS

The following materials and sources of information were used in connection with the working out of this project:

Map: Atwood's Geography; Tarr and McMurry's Geography.

Geography reading: Allen's "Asia," Bowman's "Asia," Carpenter's "Asia"; current literature from railroad folders, magazines, newspapers; "Book of Knowledge," atlas, encyclopedia; myths, stories, and legends of Japan; books of general information at the library; information obtained from Japanese and friends who have visited Japan, and from visits to the museum and library for study (the whole class) and to an importing house, curio stores, etc.; material made in the manual-training shops; Japanese pictures and articles brought from homes.

PROCEDURE

By way of raising or launching the project, the teacher brought to school a "willow-pattern"[1] plate, showed it to the children, and told its story to them. This aroused interest and curiosity in the minds of the children. They told of things they had seen which came from Japan and asked if they might bring them to show to the class and tell what they knew of these curios. With this as the beginning it was soon decided to collect many things, make certain articles in the manual-training shop, and have a Japanese afternoon on which the children could show their display, tell Japanese stories, give a Japanese dramatization, have a spelling match, using words learned while studying Japan, play a ball game, using questions on Japan. Later some arithmetic problems found a place in this project.

EXPLORATION

Inquiries now began to be made by the children as to what they could do to make this Japanese matinée a success. What would they need to know and where could they get information etc.? (See "Laws of Learning," on page 16.)

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[1] The "willow-pattern" is based upon a Chinese love story, but was used in this connection for the purpose of arousing interest in oriental countries.

The teacher read to the class Longfellow's verses on Japan, from "Kéramos."

Cradled and rocked in Eastern seas,
The islands of the Japanese
Beneath me lie; o'er lake and plain
The stork, the heron, and the crane
Through the clear realms of azure drift,
And on the hillside I can see
The villages of Imari,
Whose thronged and flaming workshops lift
Their twisted columns of smoke on high,
Cloud cloisters that in ruins lie,
With sunshine streaming through each rift,
And broken arches of blue sky.

All the bright flowers that fill the land,
Ripple of waves on rock or sand,
The snow of Fusiyama's cone,
The midnight heaven so thickly sown
With constellations of bright stars,
The leaves that rustle, the reeds that make
A whisper by each stream and lake,
The saffron dawn, the sunset red,
Are painted on these lovely jars;
Again the skylark sings, again
The stork, the heron, and the crane
Float through the azure overhead,
The counterfeit and counterpart
Of Nature reproduced in Art.

An interpretation of this poem brought out the following facts about Japan: the islands of Japan, with their names and location, were found on the large wall map. The mention of the stork, the heron, and the crane brought out the birds of Japan which the children had seen so extensively in Japanese pictures. The hillsides, mountains, and valleys mentioned in the poem led to an appreciation of the physical features of Japan. Fusiyama's snow-capped cone led to the reading and telling by the children of the story of Fuji. Flaming workshops and manufacturing afforded topics for reading and discussions. The bright flowers that filled the land became an interesting topic. Thus, through this poem, a beautiful picture of Japan was conceived by the children.

The "willow-pattern" story was retold by the children, and suggestions of other stories were given. The class, as a whole, made a visit to the library and spent an hour reading. Although they found a scarcity of Japanese stories, several books of myths were brought back from the library. Groups of children were formed in which stories were told to one another from books. Some of these stories were retold to the entire class. It was decided to dramatize the story of the teakettle. All the children planned for this dramatization, one group of six working it out, however.

As the work progressed, the project grew in size and in importance to the class. Other trips to the library were made by groups and individuals. Books from the library, from their own building, and from the homes were brought, read, studied, and discussed.

In reading about the Japanese homes it was decided to make a Japanese house in the manual-training shop. Everything must be made in proper proportion. Each child, either alone or in groups, planned and made something in the shop that would be typical of Japan. Many made kites, as kite-flying is the national sport of Japan.

A visit was made by the entire class to an importing house to see how tea is packed and shipped.

One group of girls learned an umbrella dance. The Japanese national song was learned. Drawings and paintings of Fuji were collected and displayed. Invitations were written to guests, inviting them to the matinée. All the penmanship time was devoted to practicing writing for the invitations. The language period in the daily program was devoted to a study of the errors growing out of class discussions and written papers in connection with the project. In fact, the language text soon came into almost constant use as a source of information for correct usage of speaking and writing, since the success of the project would be determined by the approval or disapproval of the visitors attending the matinée. The regular spelling lessons during the five days this project was under way included the following words, which had been misspelled in connection with written work in the project: *separate*, *educate*, *foreign*, *foremost*, *develop*, *Japanese*, *island*, *known*, *area*, *dense*, *priest*, *badger*, *crêpe*, *kimono*, *arrangement*, *appearance*, *wrestler*, *realm*, *legend*, *myth*, *government*, *commerce*, *knowledge*, *laborer*, *Mongolian*, *articles*, *cordially*, *invited*, *butterflies*, *camphor*, *camera*, *dictionary*, etc. While this spelling lesson may take on the appearance of formal drill, yet the felt need of knowing how to spell these words, for complete success in the project, was carried over into the spelling lesson. Thus the spirit of the project permeated to a more or less degree the formal drill which seemed to be necessary for the mastery of the tools of learning. The anticipated pleasure in the complete success of the project will, to some extent, furnish the drive in the more formal drill in reducing the fundamental operations to habits of conduct (see "Laws of Learning," on page 16).

As has already been stated, five days were spent by the children in gathering information and material; in making trips to the library for books and to the museum and curio shops to see and learn about Japanese wares; in the making of articles peculiar to the Japanese in the manual-training shop; in the planning for and arranging of all these materials into a program for the final matinée.

The allotted time for the study of geography on the daily program was thirty minutes. This time (the socialized recitation) was merely an opportunity for the sharing of each other's experiences in connection with their investigation and study of various topics which would contribute to the success of the project. In this connection it should be noted that a daily program was followed, each school subject receiving its allotted time. However, much of the subject matter in the various school topics grew out of the project. Thus the regularly assigned language period was devoted to a technical study of the weaknesses and errors growing out of the project. The language text was used as a basis. The main difference between the way this language lesson was studied and the way most language lessons are studied was the spirit with which the children worked at it. In this case a felt need for the study of language lessons was created in the project. The teacher merely took advantage of the situation and proceeded to teach the formal part of school subjects under most favorable circumstances; in other words, he was creating and manipulating situations so as to provide the most favorable condition for the operation of the laws of learning (see Part One, p. 16).

What was true of the language period was true of the spelling period, of the writing period, and especially of the reading period. During these five days many poems based on some of the features of Japan were read and enjoyed. Japanese myths and stories, likewise, consumed a part of the regular reading time. The national song of Japan was learned during the regular music period. Simple problems in lumbering came from the manual work in connection with the project and were taken up in the regular arithmetic period.

In this way the spirit of the project permeated most of the school activities during the life of the project. Some projects, depending upon their nature and the materials used in working them out, excelled others in the extent to which they furnished opportunities of this sort. It is not always necessary, nor perhaps desirable, to have this wider conception of the project present. In the case of the Literary Contest (see Chapter IX) there was little opportunity for this wider correlation, yet the results along certain lines were most excellent.

The Matinée

In order to give a more detailed conception of the work done in planning for the matinée, the afternoon program is here given just as it was arranged by the children. An exhibition of Japanese curios and wares had been arranged by the pupils in the assembly room, where the matinée was held.

The features of the matinée were as follows:

1. Song, National Song of Japan.
2. Dramatization, "The Magic Teakettle."
3. Umbrella dance.
4. Exhibitions and explanations by individuals and groups. Free discussions, questions, and comments after each topic.
    - *a*. Verses from Longfellow's "Kéramos" recited by a girl. Islands named and located on the wall map.
    - *b*. A description of the flag and the government for which it stands.
    - *c*. The Japanese people, their race, characteristics, etc., described by children in costume.
    - *d*. Fashions of Japan.
    - *e*. Kites, flags, and dolls shown; festivals of Japan described.
    - *f*. A dramatization showing a Japanese school and schoolmaster, the method of study, the books, and some idea of the education of Japanese children.
    - *g*. The commerce of Japan: ocean liners, sailboats, trains, jinrikisha. (Toys made in the manual-training shop by the children.)
    - *h*. The battleships; an account of the army and navy.
    - *i*. History of Japan; Commodore Perry.
    - *j*. A house and furniture shown.
    - *k*. A rice display; an account of the rice industry.
    - *l*. A silk display; the story of silk.
    - *m*. A tea display. (Later, girls serve tea to guests.)
    - *n*. Matches made in Japan shown; the match industry.
    - *o*. Picture of Fusiyama shown by the artist (a girl), and its story told. (See photograph.)
    - *p*. Articles made of wood shown by a boy; account of the wood of Japan.
    - *q*. The importance of friendly relations between Japan and America discussed by a boy.
    - *r*. Current events (clippings from papers about Japan) given by a girl.
    - *s*. A Japanese yen shown and compared with our money by a boy.
    - *t*. A Japanese stamp shown, displaying the chrysanthemum and other flowers of Japan.

In proportion as the activities of the children in worth-while school work are whole-hearted and purposeful, desirable growth results.

It will be seen from the above procedure that the pupils assumed a whole-hearted and purposeful attitude toward the thing they were doing. It is assumed that the subject matter of Japan is worth-while school work. It will also be noticed that the laws of learning were amply provided for. Modifiable bonds were strengthened, since the pupils experienced satisfaction and pleasure in what they were doing.

Under the topic "Exploration" in the teacher's plan above, it will be seen to what extent the activities of the pupils reached. At the same time that the children were learning to appreciate Longfellow's verses on Japan they were acquiring interesting information and appreciation of many of the physical characteristics of Japan. The "willow-pattern" story and the myths found in the library were also sources of interesting discussions. The preparation and dramatization of the story of the teakettle formed an excellent opportunity for drill work based on usage of words, formation of sentences, punctuation, and spelling. Planning for the matinée called for judging, deciding, and the providing of means for carrying the project to a successful end.

In considering the manner in which the above lesson proceeded one can readily see that the work was carried out under life conditions as nearly as possible. Under the careful guidance of the teacher the school was treated as a democracy in embryo. Opportunity for the development of those characteristics essential for the citizenship of a democracy was in evidence. Pupils were acquiring the ability of making suitable adaptations to new situations. They were acquiring faith and confidence in themselves by planning and directing their own conduct with due regard for others. They took great pleasure in relating and sharing their own experiences, thus developing moral habits. While living together with a richer idea of purpose, the children were learning, through their own experiences, to make increasingly finer discriminations as to what constitutes right and proper conduct in a social group.

CHAPTER V

PROJECT: THE MILK FAIRIES

During the school year 1919–1920 a special health campaign was waged among the school children of a certain city. The weight of each child in the elementary schools was ascertained, and milk was furnished to all children who were 10 per cent underweight. The parents paid for the milk if they were able; if they were not able, it was paid for by some charitable organization.

This campaign had a twofold purpose: (1) to improve the immediate health of the children and (2) to educate the public in the use of milk as an article of food for children.

One of the critic teachers in connection with the Teacher-Training School, who had been using the project method quite extensively in her class work, seized upon this health campaign as an opportunity for a project in English. It is the purpose of this chapter to set forth, as clearly as possible, the details of this project.

The following plan will show the teacher's aims, the pupils' aims, the material used, the general scheme for drill in the school arts, and the class procedure, providing for the healthy operation of the laws of learning.

The wording of this particular project took this form: "To write and act a sketch called 'Johnnie and the Milk Fairies.'"

The Teacher's Aims

Ultimate. (1) To create a desire to speak and write correctly and to form the habit of so doing; (2) to improve the health of pupils now and in later years by having them become intelligent about milk and interested enough to form the habit of drinking it regularly.

Immediate. (1) To correct "baby blunders" in speech; (2) to enlarge the vocabulary in everyday use; (3) to write conversation for plays, realizing the necessity for help and drill in certain grammatical forms and constructions; (4) to give drill in forms after a felt need for them has been created.

Materials and Sources of Information

The textbook in language was in almost constant use during the writing of this sketch; suitable materials for costumes were used; large pieces of cardboard were used for making large milk bottles; information as to the chemical constituents of milk was secured from books, dairymen, and older brothers and sisters who were in chemistry classes in high school.

Procedure (Exploration)

In the raising or launching of a project the teacher aims to create a situation in which the project becomes real to the children. The solution of the project must result in genuine satisfaction to the children. The raising or launching of such projects as will fulfill these conditions is no easy matter. However, in providing this kind of project depends the success of the project method.

In this instance the teacher enlisted the interest of the children by telling to them the story of "Johnnie and the Milk Fairies." The discussion which followed under the stimulating guidance of the teacher soon put the class in an attitude of interest toward this story. It was finally suggested by some member of the class that they dramatize the story. It was also suggested by someone that the story would have to be rewritten in the form of a play before it could be dramatized. Another suggestion was made that they could give this play for another room or for the Parent-Teacher Association. Thus the project was raised, and inquiries began to be made as to how to get ready for the final entertainment.

When the teacher started to read the story the first time to the children he may or may not have had this project in mind. The chances are, in this case, that the project sprung up out of a real social situation and grew, under the teacher's guidance, into the form it finally took. On the other hand, he may have planned quite definitely beforehand for this project. He may have thought out even the wording of the project, and many of the details. Under whatever conditions the project is launched a felt need and personal interest in its solution must grip the children to such an extent that they work at it whole-heartedly.

PROBLEMS

In the preparation for the solution of the project certain problems would naturally arise: (1) How should a play be written? This problem called for an examination of certain dialogues which the children found in their readers and other books. The writing of conversation with proper punctuation was thus examined and studied. The acts and scenes in plays were considered. (2) How many acts and scenes should we have in this play? After consideration the children decided to have one act and three scenes in their play. (3) How should they go about writing this play? They decided to arrange for the necessary characters in the various scenes and then have groups of children appointed who should be responsible for writing certain sections of the play.

Procedure

Thus suitable conversation in the different scenes was written and reported to the class as a whole. Corrections as to punctuation, choice of words, arrangements, etc. were made, and many corrected forms were written on the blackboard. Sometimes the report would be rejected and returned to the group for revision.

Often several of the best selections would be combined by a committee into one good form for the play. Often an individual pupil would contribute a single portion (songs, or better ways of staging the play) on his own initiative. Thus the work proceeded to final completion as a class project.

When it became evident to the children, as it often did, that they badly needed to know how to write better and in better form, drills were given for the purpose of enabling them to work on the play more efficiently. Much of the regularly scheduled time for technical English, grammatical forms, spelling, penmanship, etc. was devoted to drills on weaknesses discovered in the writing of the play. The language text was in constant use. Thus the teacher seized many opportunities for drill which satisfied a felt need for the correct use of the school arts (see "Laws of Learning," on page 16).

The play was finally written, suitable arrangements for staging it were made, and it was given for the Parent-Teacher Association. This play or project was worked out very elaborately, with fairy dances, songs, costumes, and many stage furnishings. However, it could have been given in a very simple manner, leaving much to the imagination.

The time devoted to the writing of this play was the thirty minutes allotted to the study of language during a period of two weeks.

ACCOMPLISHMENT

The children, working in this manner and under these conditions, naturally made rapid advancement in the use of both oral and written English, especially punctuation peculiar to conversational style. Much individual practice in correct and distinct pronunciation found a place in this project. Vocabularies were enlarged.

In addition to much practice in the school arts, the children gained much valuable and interesting information as to the constituents of milk. They also learned, in an impressive way, much of the value of milk as a food for children.

Perhaps the greatest success of this project should be defined in terms of the spirit and attitude of the children toward the study of English, also toward school and life in general. The moral fiber of the children was strengthened, since much of this work required that the pupils share responsibility. The heartiest of coöperation was necessary for the success of the project (see "Democracy," on page 27). The success of the individuals meant success for the entire class. Pleasure or annoyance for the individuals was defined in terms of approval or disapproval by the group or class. Skill in the use of the school arts was greatly enhanced, since the conditions of the project provided for drill under the operation of the laws of habit (see "Laws of Habit Formation," on page 24).

Learning, of course, followed, since the laws of learning were in constant operation (see "Laws of Learning," on page 16).

This project was especially strong in that it offered splendid opportunity for practice in judging, planning, organizing, and executing on the part of both the individual and the class as a whole.

The drive was, for the most part, within the class and had its roots in the native human instinct of desire for praise or to excel.

In other words, an analysis of the situation in which this project was worked out reveals the fact that ample provisions existed for the operation of all the principles and laws set up in Part One of this volume. The spirit and attitude of the children toward the solution of the project is the one essential factor in determining the presence of a project. This is the essence of a project. The worthwhileness of a project should be judged by the extent to which useful knowledge, skills or habits, and desirable attitudes or ideals are acquired by the children.

In order to convey a better comprehension of the work done in this project the play, as written and given by the children of this fifth grade, is given below in full. This is the children's work, absolutely. The teacher's part was that of a director, guiding by means of questions and suggestions, but never doing the work himself. All the censoring or editing was done by individual pupils, groups of pupils, or the entire class under the leadership of the teacher.

JOHNNIE AND THE MILK FAIRIES

In One Act

CHARACTERS

Johnnie	Sugar Fairies
Johnnie's Mother	Fat Fairies
Johnnie's Father	Protein Fairies
Dr. Rouswell	Mineral Fairies
Water Fairies	

SCENE I

Dining room. Johnnie's *mother and father finishing breakfast. Telephone on small table.*

Mother. Father, I am much worried about Johnnie. He is so sleepy this morning I cannot waken him. Luckily it is Saturday, so he can sleep. He is tired all the time and cross and fretful, and he has no appetite for the things he ought to eat.

Father. Sometimes I think Johnnie's trouble is just temper. Perhaps a spanking would help him.

Mother. Oh, no! I can't spank him when I think he may be sick.

FATHER. Why don't you consult our good neighbor Dr. Rouswell? (*Rises and looks out of window*) There is his car still waiting for him. If you call at once, he will perhaps be able to come before he leaves for the office. I must be off to *my* office. Good-by, mother.

MOTHER. (*Accompanies him to door*) Good-by, father.

(*Reënters room and sits down to telephone*)

(*Talking into telephone*) Main 1234, please. Hello; Main 1234? I beg your pardon. Main 1234, Central. No; Main 1234, please. Good morning, Dr. Rouswell. This is Mrs. Jones talking. Have you time to make a short call here before you go? No one is sick, but I wish to consult you about Johnnie. Thank you, doctor. (*As she hangs up receiver* JOHNNIE *enters, rubbing his eyes and looking a little untidy*) Good morning, dear. Sit down and drink this glass of fresh milk while mother gets your breakfast.

JOHNNIE. I don't want any breakfast unless I can have coffee, and that piece of lemon pie left from last night.

MOTHER. Johnnie, dear! Lemon pie for breakfast! And coffee!

(*A knock at the door.* MOTHER *goes to door and ushers in* DR. ROUSWELL)

DR. ROUSWELL. Good morning, Mrs. Jones.

MOTHER. Good morning, doctor.

DR. ROUSWELL. Hello, Johnnie! Are you my patient this morning? What's wrong?

JOHNNIE. Aw, nuthin'.

MOTHER. I think he is not really sick, doctor. Yet I am worried about him. He is listless, fretful, and without appetite. Truly, doctor, I am much distressed.

DR. ROUSWELL. Hum-m-m. Come here, Johnnie. (*Feels* JOHNNIE'S *pulse, takes his temperature, looks at his tongue, listens at his chest, thumps him in different places, then looks at him gravely for a moment.* JOHNNIE *fidgets, wiggles, and squirms.*) What do you like best to eat, Johnnie?

JOHNNIE. Coffee, when mother will give it to me, and pie, candy, and pickles.

DR. ROUSWELL. All-day suckers, eh, Johnnie?

JOHNNIE. Yes, sir, and soda water.

DR. ROUSWELL. And milk, sonny?

JOHNNIE. I don't like milk. Mother's always asking me to drink the nasty stuff, but I don't want to.

MOTHER. I know he seems spoiled, but I insist and insist, and he refuses and refuses till at last, because I feel he must eat something, I permit him to have what he asks for.

DR. ROUSWELL. (*To* JOHNNIE) Of course you like to play?

JOHNNIE. The boys won't let me, very often.

MOTHER. They are very rude boys, doctor, and, indeed, Johnnie is too delicate for rough play with great overgrown boys.

DR. ROUSWELL. Mrs. Jones, that same healthful play, plenty of sleep in a well-ventilated room, wholesome food, and, above all, plenty of milk,—these things instead of medicine are what Johnnie needs, and what he must have to be strong and well.

JOHNNIE. (*Almost howling*) Oh, doctor, I don't like milk. I want coffee and tea.

DR. ROUSWELL. (*To* MOTHER) Your boy is suffering from malnutrition. He is not sick, now, but he is in condition to become seriously ill at any exposure to disease.

MOTHER. (*In great distress*) Oh, doctor!

JOHNNIE. I won't eat oatmeal and milk. (*Places milk on floor and calls cat*) Give the milk to the cat. (*Runs outdoors*)

SCENE II

JOHNNIE'S *back yard. A large tree on one side.* JOHNNIE *standing. Some boys playing ball come into the yard.*

JOHNNIE. Hello, boys.

BOYS. Hello, Johnnie.

JOHNNIE. May I play, too, Jim?

JIM. Sorry, John, but you are not strong enough to bat and pitch or catch. You'll make an out if we let you play.

JOHNNIE. I think you're real mean. I can't help it because I'm not strong, can I?

BILL. Yes, you can! You can play outdoors, and sleep with your windows open, and not eat so many all-day suckers. And you can drink milk instead of always crying to your mother for tea and coffee. You're a sissy, Johnnie Jones!

JOHNNIE. (*Whining*) You're another, you're another. (*Walks back to the big tree and lies down under it*) I didn't sleep much last night. I'll lie down under this tree and rest. (*Rubs his eyes*) Why, hello, I thought this was a tree, but it is really a great milk bottle.

(*A bugle blows. Some fairies appear, and several approach* JOHNNIE)

SUGAR FAIRY. Hello, boy, who are you, and what are you doing in Fairy Milk Land?

JOHNNIE. I am Johnnie Jones, and who are you?

SUGAR FAIRY. I and these, my sisters, are called Sugar. Do you know there are 195 calories of sugar in a quart of milk which contains 650 altogether?

JOHNNIE. Calories? That's the word I missed in spelling. But I didn't know sugar had anything to do with either calories or milk.

SUGAR FAIRY. (*Laughing*) That's a good joke on you, Johnnie Jones. You thought sugar is found only in cakes and candies or in sugar bowls, didn't you? Oh, Johnnie, Johnnie Jones, you are a funny boy.

(*She and her sister fairies dance away from* JOHNNIE)

JOHNNIE. (*Sheepishly*) I shouldn't have hated milk so much if I had known there was so much sugar in it.

(*Another group of fairies separate themselves from the others and walk up to* JOHNNIE)

FAT FAIRY. Hello, Johnnie. My name is Fat.

JOHNNIE. (*Smiling*) I knew it.

FAT FAIRY. (*Pouting, but smiling*) I won't ask you why. Do you know there are 347 calories of fat in a quart of milk? Fat is not my only name. I am also called Cream. When I am frozen I am Ice Cream.

(JOHNNIE *and* FAIRY *join hands and jump around in a circle, saying, M-m-m-m-m-m-m. Bugle blows.* FAT *runs to* SUGAR *and embraces her.* BOY FAIRIES, *with* CAPTAIN, *approach* JOHNNIE *and salute.* JOHNNIE *weakly salutes in answer*)

BOY FAIRY. (*To the other fairies*) Attention!

CAPTAIN. (*To* JOHNNIE) Hello, Johnnie! I am Protein. P-r-o-t-e-i-n. That means muscle builder. (*Shows his arm muscle*) I make muscle for the children who drink me and help them to grow into strong men and women. (*To* BOY FAIRIES) Right about, face! Forward march! (*They march to place back of* SUGAR *and* FAT) Halt! Right about, face!

(*Bugle blows. Another boy fairy comes up to* JOHNNIE *and salutes.* JOHNNIE *salutes.* FAIRY *smiles, showing strong white teeth.* JOHNNIE *smiles, but tries to hide his yellow teeth*)

MINERAL-MATTER FAIRY. Hello, Johnnie! I am Mineral Matter. I live in milk, and I give the children who drink plenty of milk strong bones and strong white teeth.

(JOHNNIE *holds his arm in front of his teeth, kicks ground with his toe, and looks most unhappy while* MINERAL MATTER *is speaking. At conclusion of above,* MINERAL MATTER *salutes and joins other fairies. Bugle again. A girl fairy approaches* JOHNNIE)

WATER FAIRY. I am Water (*In a laughing voice*), and I make things pleasant for the other fairies—Sugar, Fat, Protein, and Mineral Matter. It is the water in milk that makes it possible for people to drink it. And oh, Johnnie, always remember to drink milk slowly.

(*Waves her hand and joins the other fairies*)

FAIRIES. (*Recite together*)

Oh, we are the fairy calories
Who live in a bottle of milk;
We make children well and strong,
And we are just as fine as silk.

We make little folks strong,
We keep little folks warm,
We make their cheeks so rosy and red.
Oh, MILK is the best food on which to be fed!

We are the fairies
  Of all the milk,
And babies think us
  Fine as silk.

We live in a castle,
  With marble so white,
And every day bring
  Children delight.

(*All sing song to tune of "Let the Rest of the World go by"*)

Good milk is to drink;
Makes brains to think.
It makes us well and strong,
So that we'll all live long.
It is the best of all the rest
Of the foods that stand the test.
You'll find calories
In large quantities,
Which add to every day good health.
So let us all begin to think
That milk's the food to drink,
And let the rest of the drinks go by.

(*Bugle blows and the fairies run off as* JOHNNIE *sinks into a sound slumber*)

MOTHER. (*Calls from house*) Johnnie, John–nie! Come in to lunch.

SCENE III

JOHNNIE. (*Wakes and stretches, then remembers his dream and runs into the house*) O mother, mother dear! I've had such a lovely dream about the milk fairies. Please give me a *large* glass of milk and I'll tell you all about my dream. Be sure to give me a big glass, mother.

CHAPTER VI

PROJECT: AN AMERICAN LEGION REUNION

This project was worded thus: "To give an American Legion reunion: reminiscences of France to be given, pictures and souvenirs shown, and an entertainment enjoyed."

MATERIALS

The following materials and sources of information were used in the solution of this project:

Tarr and McMurry's "Geography," Book Two; Atwood's "New Geography, Book Two"; Carpenter's "Europe"; Carpenter's "How the World is Clothed"; Smith's "Commerce and Industry"; Crissey's "The Story of Food"; Allen's "The New Europe"; Chamberlain's "How We are Clothed"; Williams's "Paris"; Marian M. George's "Little Journeys to France and Switzerland"; Bradley's "Touring Europe in an Automobile"; Monroe and Buckbee's "Europe and its People"; Dickens's "Tale of Two Cities"; Barstow's "Famous Buildings"; Nicolay's "Boys' Life of Lafayette"; Wheeler's "Boys' Napoleon"; Stevenson's "Children's Classics in Dramatic Form" ("Jean Valjean," dramatized); Canfield's "Home Fires in France" (pp. 1–26, 259–261); *National Geographic Magazine.* Pictures by Rosa Bonheur, Millet, Corot; pictures secured from the National Geographic Society; maps; newspaper clippings; phonograph record, "The Marseillaise"; songs: "The Marseillaise," "Somewhere in France is a Lily," "Joan of Arc," "Long, Long Trail."

PROCEDURE

The following report of this project was written and handed in by one of the members of the senior class in Teachers College who was doing her practice teaching in this room during the two weeks this project was being worked out.

A stranger looking into this sixth-grade room on January 21 might have wondered if its occupants had misjudged the date of the Declaration of Independence or of Flag Day, for the room looked patriotic enough to celebrate either of those events. At one end hung a huge American flag, with smaller ones here and there. The colored designs might have proved a clue, for the central drawing showed an American flag gracefully draped with the tricolor of France. On the front board, too, hung a French flag, while at intervals along the blackboard fleur-de-lis had been drawn and "Vive la France" and "The American Legion" had been written in colored chalk.

For two weeks the pupils of the room had looked forward to this day with a great deal of anticipation, for it was the time selected for the American Legion reunion. This morning they began to arrive even earlier than usual, these erstwhile sixth graders, but today veterans of the World War or Red Cross nurses. Some of the soldiers wore civilian clothing, it is true, but every boy who possessed a Boy Scout uniform had pressed it into service. The majority of the girls were patriotically attired in Red Cross uniforms made from cooking-aprons, with towels for headdresses, decorated with the red emblems.

The teacher had once visited France and hence was able to speak French, at least well enough to make herself understood. Now she delighted the children by explaining some simple French phrases and then asking them in French to open the door, close the window, and so forth. The children, quick to understand, followed her directions and even tried their newly acquired phrases on one another.

"Now," said the teacher, at the end of the French lesson, "we are anxious to hear about some of your experiences in France. Who is ready to tell us what he saw?"

Forty-seven hands went up as every nurse and veteran evinced his desire to volunteer. Alcide, a manly-looking little soldier in a Scout suit, was called on. He arose, walked to the front of the room, and called for his group. Immediately two other boys joined him, and they proceeded to make themselves comfortable on stools in a little group at the front of the room. Then a girl approached from the other end of the room.

"*Bonjour, messieurs,*" began Katie.

"*Bonjour, mademoiselle,*" replied the three in unison.

"Won't you sit down?" asked one, proffering a stool.

"*Merci,*" murmured Katie. Then: "Won't you tell us of some of your experiences overseas? We are especially interested in France."

Thus encouraged, Alcide told of some of his adventures. The audience learned that he had been an aviator with his chum, Theodore, one of the other members of the group. Together they had flown over France, had seen how the peasants appeared and acted, how their farms were taken care of, and what was produced on these farms.

The two other soldiers then told what they had seen of interest along the battle line.

"Suppose you tell about your work in France," said Alcide, in conclusion. "You were a Red Cross nurse, weren't you?"

So Katie described what had impressed her in France and told what great work her organization had done.

Many questions were asked and discussed by Alcide's group and others.

The group then returned amid the applause of the other soldiers, who, in turn, told in what divisions they had been, where they had landed, and in what drives they saw action. Some of the audience, evidently skeptical, called on their comrades to point out the various cities and ports on the map.

Robert had had an exciting adventure behind the German lines, which he related to the class. Warner covered himself with glory in a remarkable speech in which he told about the past and present French government as it was told to him by a poilu, whom he met while on a leave of absence in Paris.

The audience discovered that it contained members of almost every division of the army, and numbered among those present representatives from the infantry, artillery, aviation, transportation department, and medical corps, all of whom had something to tell and were eager to tell it. Thus engaged, time flew by on wings, and the children were genuinely disappointed when the time came for another part of the program.

"America" was now sung, while the audience stood in respectful attention, and the soldiers at salute.

When the recess bell rang, Edgar, the captain of the boys' line, assembled his men for military drill, which was the usual march downstairs. He had had some trouble in getting the boys to march through the halls in order without being chaperoned at least part of the way by the teacher. But today, after the soldiers had saluted their captain in true military style, they marched down in such fine order as to elicit compliments from three of the teachers. This praise augured well for further conduct of a like sort.

Unfortunately, at least so the children thought, manual training and sewing took up the time from recess until noon, and they were obliged to become ordinary pupils for the time being; but at a quarter after one the reunion again convened.

The first part of the afternoon was given over to more speeches by veterans and nurses. One soldier, assisted by members of a group, told about the soldiers from the French territories. With his assistants he demonstrated on a black outline map the routes which were used by these soldiers in reaching France, and pointed out the location of the territories. After this speech, which almost deserved to be called a lecture, several soldiers told about the beautiful and interesting places they had seen in Paris, and showed pictures of the Eiffel Tower, Notre Dame, the Louvre, the tomb of Napoleon, etc.

Perhaps the most interesting of all, however, was a conversation between several Red Cross nurses. Beatrice showed her friends, and incidentally the whole class, pictures of France and of the battlefields as they now appear. Katherine told about France as it looked before the war. But decidedly the "hit" of the afternoon was Mademoiselle Sylvia, as she chose to be called. Sylvia, a tiny Russian girl, delivered this little speech to her audience: "While I was in a little village in France I saw a great many women going out to the fields one day. I thought it was strange to see the women working out of doors, so I went up and spoke to them. One could speak English only—" here Sylvia paused impressively. "The French put 'ze' on everything. The Frenchwoman said to me, 'I think it is zo strange zat ze Americans let ze men work in ze fields when ze women could do it.'" Sylvia again paused, and perceiving the amusement of her audience she went on gravely, "Of course, the way she spoke sounded funny to me, but I turned my head away so she couldn't see me smile, because it isn't ever nice to laugh at people when they are talking." Thus, in a deliciously frank way, did Sylvia take revenge against the class.

Annabel, aged sixteen and consequently awkward and ill at ease among the younger pupils, was today supremely happy. For had she not brought a whole tableful of silk handkerchiefs, aprons, and banners, which her brother had brought from France, to show to her admiring classmates? To her, too, fell the privilege of reviewing the French silk industry in a speech which was really well given.

For several days a number of pictures had been displayed on the front board, and the curiosity of the children had prompted them to examine them. So they were more than ready to listen when a group of ten pupils gave talks on the life of Rosa Bonheur and explained these pictures to them.

Now came the event of the afternoon, a dramatization from "Jean Valjean," selected as the best from several groups which had worked out stories. What a gruff, hardened convict Edgar did make! And what a kindly, gentle old priest twelve-year-old James had turned into! At the end a mighty clapping shook the room and more than rewarded the actors for their efforts. Sol, whose quaint accent spoke of Russian birth, declared that the scene was so sad that it made him want to cry, but added that he would like to read the rest of the story sometime.

But reunions, like all other things, must end, and four o'clock found the forty-seven soldiers and nurses listening to the strains of "The Marseillaise" from the phonograph. Then they arose and sang the stirring words of the French national anthem as the last number of the program.

Raising the Project

The reunion described above came at the end of two weeks' work and as a climax to a project which was carried out during that time. This project included not only the reunion itself but all the work done in connection with the study of France, which had presented itself in the geography course.

The teacher had under her direction at this time two student teachers from Teachers College. The aim of the three teachers was to plan a project which would supply a strong motive for the children in their study of France. They found in working out the project that it far exceeded its original scope and included not only geography but practically every subject in the curriculum.

The original plan had been merely to make a collection of souvenirs from France, but by a happy coincidence, just as the teacher was ready to present her idea, something happened which considerably broadened the whole plan. One of the boys of the room brought to school a vase made from a shell which his brother had picked up from a battlefield in the World War. The other pupils were so intensely interested in the vase that the boy was given the opportunity to tell about some of the things his brother had seen in France. The other children naturally were eager to bring souvenirs which they had at home and to tell of things which their friends and relatives had seen. Consequently the teacher made the suggestion that they pretend that they were their friends and relatives and that they hold a reunion of all the returned soldiers. It was decided to tell of the interesting things they had seen in France, to show souvenirs, and to prepare an entertainment in connection with these. In this way the project was brought before the children, and from this point it worked itself into the regular school curriculum in a natural and unforced way.

THE TEACHER'S AIMS

The reunion, then, became the children's aim or project, but the teacher's aims covered far more than that. Above all, it was desired that the pupils learn to know and appreciate the great things which France has contributed to civilization, that they realize the interdependence of France and the United States, that they appreciate the problems which confronted both these governments during the war and after; and, in learning these things, that they learn respect for the American government. These were really ultimate aims, but in carrying them out more immediate aims were to be kept in view. The main object was to give a rational knowledge of France and to show the effect of natural surroundings, such as climate, soil, and location, on development.

These objectives had to do with the imparting of knowledge; the teachers sought to fulfill other aims along other lines at the same time. The cultivation of good studying and reading habits was especially sought after. In having the pupils read about Napoleon, Lafayette, and Joan of Arc the teachers desired to interest them to such an extent that they would continue their reading of French history outside of school. By the methods used in carrying out the project the teachers tried to imbue the children with a spirit of coöperation and also to develop in them the ability to speak before an audience.

THE USE OF PROBLEMS

The pupils were looking forward to the reunion in which they were to be soldiers; therefore this idea was utilized in all the work. The study of France was taken up almost entirely through the use of problems, some of which were suggested by the pupils. Most of these problems, of which there were about twenty-five, were worked out in the geography period; others, however, fitted into such subjects as hygiene, arithmetic, language, and reading.

The first problem which the children set to work to answer was this: "How did the soldiers get to France?" In order to answer it they learned the ports from which the soldiers sailed and the ports in Europe at which they landed. This included drill in spelling, location, and the proper pronunciation of French ports.

Another problem which the geography class worked out was this: "Many of the soldiers did not get to Paris. What impressions were received by those who were so fortunate?" The pupils found that among the many things the soldiers saw were beautiful parks and boulevards, the Louvre, the tomb of Napoleon, the Eiffel Tower, Notre Dame, the Royal Opera House, and such suburbs as Fontainebleau and Malmaison. These the children studied in groups and reported to the class.

Other problems brought out points such as climate, location, resources, industries, and territories. All the topics were studied from this point of view: "What did the American soldiers see or find?" For instance, these were some of the problems: "What soldiers that they saw fighting came from French possessions?" "Why were many convalescent soldiers sent to southern France?" "In visiting with the poilus, at what occupation did our soldiers find most of them engaged?"

It happened that at this time the arithmetic class was studying interest and banking. Problems like this were therefore taken up: "Why did the French people have so much money before the war?" The thrift of the French peasants and the school savings banks in France were discussed, and problems in banking and interest were introduced.

The questions Why was the drinking-water of the soldiers tested? and Why did the soldiers see so much wine-drinking in France? were taken up in lessons on hygiene. This led to the study of impure water, sanitary conditions in both France and our own country, and introduced a study of grape-raising and wine-manufacturing in France.

Other problems were taken care of in the reading and language periods. Stories were read from Dorothy Canfield Fisher's "Home Fires in France," and dramatizations from a set of Dramatic Readers were worked out. They included scenes from Victor Hugo's "Les Misérables," stories of Joan of Arc, "The Necklace" by Maupassant, all in simplified forms.

The question What works of art did the soldiers see in the Louvre and other art galleries? brought up the study of famous French artists—Corot, Bonheur, Millet, and Le Brun. The class made a study of the artists and discussed their important pictures, copies of which were obtained from Teachers College. In the English period stories were written about these pictures for the room's newspaper, *The Monitor.* Only those stories which were written with the most careful penmanship were selected; thus a motive was supplied for better writing.

Some of the problems were taken up and worked out by each member of the class; others were worked out by groups who reported to the class.

ILLUSTRATION. A LESSON ON THE SILK INDUSTRY IN FRANCE

One of the problems which was taken up by the latter method was carried out as a geography lesson. Ten or twelve questions pertaining to the silk industry in France were placed at intervals along the blackboards. The first question was: Why did the soldiers bring home so many silk articles from France? Others had to do with the raising of the silkworm, the methods used in manufacturing silk, the extent of the industry, the chief manufacturing cities, and other important points. The children were told at the beginning of the period that they might "travel" through the silk industry. This was one of their favorite geography games, so they knew at once what to do. All the pupils quietly left their seats and went about from board to board until they had read all the questions. Then each pupil stood under the question which he wished to work on. In this way groups were formed under each topic. Some groups were larger than others, and here the teacher in charge stepped in and decided whether that number was necessary or whether another group needed more members.

When the groups had been arranged, about twenty minutes were given for preparation. Each group proceeded at once to choose a leader and then decided what was necessary for its members to tell. During this time each group was allowed to do whatever it thought necessary for its preparation. Different members went to the bookrack or to the hall cupboard for books which they thought would help them. Others studied from their textbooks. One boy remembered having seen a case of silkworms in the office; these he secured and prepared a talk on them.

At the end of twenty minutes the teacher called the groups together, and they took their seats. The leader of the first group read the question and called on the members of his division. As each child recited he came to the front of the room and faced the class. When the group finished, all who had questions to ask rose and stood quietly until acknowledged by the group leader. The pupils could ask questions about anything they did not understand, for they knew they were to be held responsible for the points made by each division; or they might add anything which they thought important. The teacher acted as a sort of referee, deciding whether the questions were important or whether they were worth debating. However, this was not often necessary, for the pupils themselves signified to one another when enough time had been spent on the question or when they thought the discussion unimportant. In this way each group recited until all the points had been taken up.

Drill Work

In working out the project it was found that much drill was necessary, especially in the English work, both oral and written. In preparing their talks the children soon found that they were often corrected for "baby blunders," the too frequent use of *and* and other words of the kind; these they set about to eliminate. The writing of stories, too, brought up the need for studying the use of complete sentences, and gave the pupils a reason for drill on verbs and adverbs. Consequently, while the time was ripe for these things, drill on them was emphasized.

Much drill in the spelling and pronunciation of French names and cities and of other words connected with the project was given; the children also tried to increase their vocabulary and use the new words they learned in their oral speeches. The motivation of penmanship has already been spoken of.

RESULTS OF THE PROJECT

If the teachers were to succeed in making the project worth while, then it was necessary that the results of the work follow along the same lines as the previously stated aims. In carrying out the project these aims, both immediate and ultimate, were constantly borne in mind and referred to whenever a new step was taken. At the end of the work, tests were given to discover whether this method was as successful as the more usual methods of presenting the subject matter. The results of the tests were entirely satisfactory. Along other lines the benefits were not so easily measured, but the teachers who engineered the project felt at its conclusion that the pupils did develop better reading and study habits, that they did gain greater spirit of coöperation and confidence in their own powers, and, above all, that they had a deeper interest in and a larger outlook on France than they would otherwise have had.

CHAPTER VII

PROJECT: THE WORLD'S SERIES

This project was, "To learn the why and wherefore of the World's Series." This was worked out during the week of the World's Series at the Polo Grounds, New York City, in 1921.

THE TEACHER'S AIMS

Ultimate. (1) To bridge the gap between the children's outside interests and the subject matter in school; (2) to encourage interest in wholesome play (provision for leisure time); (3) to enlist the children's interests and energy for drive, or inner urge, in school procedure; (4) to encourage and develop an inquiring mind; (5) to get the children to see a problem as a problem and to give a technique for the right way of solving problems.

Immediate. (1) To teach some fundamental principles in geography: namely, (*a*) the revolution of the earth, (*b*) the time belts, (*c*) the change of time, (*d*) longitude and latitude, (*e*) the history value and use of wireless; (2) to relieve the playground situation by organizing systematic play; (3) to get good form in oral expression by providing the opportunity for explaining things and telling things exactly (explaining games); (4) to introduce and interest children in good magazines; (5) to start the interest and activity of a timid class.

MATERIALS

The following materials and sources of information were utilized: Allen's and Carpenter's Geographical Readers; "Book of Knowledge"; encyclopedia; daily papers; *Popular Science Monthly*; *Scientific American*; *Literary Digest*; "Primer of Hygiene."

PROCEDURE

1. *Situation.* The entire group of children was rather slow. They seemed in the beginning of the year to be somewhat indifferent to school work. The boys, however, were very much interested in the World's Series which was being played between the Yankees and the Giants at the Polo Grounds, New York City. They would go every noon to the local bulletin board, where the returns were being announced. The animated conversation of the boys on the playground, very unlike the dull answers derived in school, was: "My, but I hope the Yanks win again to-day"; "The Giants seem to have more good pitchers than the Yanks"; etc. The second day of the series several of the boys came into the room almost late, but feeling great satisfaction because they had found that the Yanks had won the second game.

2. *Raising the project.* The boys were asked to explain to the class why they were so breathless. They told of the returns they had been hearing about. Some seemed intelligent about the World's Series, but others were anxious to know more about it. From the keen interest shown it was decided to have them learn all they could about it and try to explain it so that all could understand.

PROBLEMS

Problem 1. How, when the game begins at the Polo Grounds at two o'clock, can we get the news at eleven? The children were to find out at what time the game was called at the Polo Grounds. The next day a picture was shown of the Polo Grounds and a vivid description given, by one who had seen Big League games, of the scene there at the beginning of the game. At two o'clock the game was called; but the boys had been to the bulletin board that very day, and at one o'clock they had the results of the game, which was not begun until two. This brought the children face to face with the problem. After consideration some of them had suggestions to offer, but nothing which satisfied the group. Thinking that they might find some explanation in their books they began searching, being given a heading under which they might find it in the index. With the help of the teacher and of globes representing the earth and the sun, they found out about the revolution of the earth. They learned why it was eleven o'clock at Berkeley, California, when it was two in New York, and why the game can begin there at two and we can get returns at eleven.

Problem 2. Why do we have different time in different places? The children could not understand why we did not have the same time all over the United States. They resorted to their books again and learned about meridians, or midday lines; also about the four time belts, the change of time, important cities in different time belts, why the lines dividing time belts are crooked, etc. Maps were made showing the time belts, locating features (mountains, plains, directions, their own time belt) and indicating reasons for the names of the different ones (mountain time, for example). This problem was presented by asking the children at what time they usually had lunch. They said, "Twelve o'clock." Then it was figured out, by what they had learned about the change of time, at what hour, according to the present standard, they would be eating lunch if the time were the same all over the United States.

NOTE. These problems gave opportunity for the use of the five distinct steps of thinking: (1) a felt difficulty (seeing that we received the news here before the time of the game in New York); (2) its location (that it was impossible to get the news here at eleven when the game did not begin until two); (3) suggestions (various suggestions from members of the group, including the study in books); (4) development by reasoning (after studying in books, information was gathered as possible solutions); (5) further observations and conclusions formed (the reasons were determined why there was the difference in time). One of the aims in education should be to develop ability in forming reasonable conclusions quickly. It would be well to give *patterns* of good thinking, showing the steps and assisting the children in studying and forming conclusions. In life they will be called on to form judgments and conclusions many more times than they will be called on for information and facts.

Problem 3. How is it possible to get returns at Berkeley, California, almost as soon as the plays are made? To some of the children this seemed impossible, but by the *boys* it was readily comprehended. The three most backward boys forgot that they were *in school* and very plainly and intelligently explained wireless. One of these boys had a wireless at home and had tried to get the baseball returns. These boys seemed very happy that they were contributing something to their group. One boy brought his wireless outfit and explained it to the children. Most interesting discussions, covering different kinds of codes, senders, receivers, aërials, grounding (both on land and sea), followed. Pictures were shown and diagrams drawn to illustrate more clearly to the children. They studied how sound travels, by waves, vibrations, etc. Magazines were brought, and many boys were led to read the *Popular Mechanics* and the *Scientific American* to find out more about wireless. One small group read a report on Marconi. It was decided that he was a hero of invention. The wireless discussions naturally led to wireless as used at sea.

Problem 4. How was a ship that went down the summer of 1921 off the Pacific coast located? From the study of meridians—Greenwich, the prime meridian, and their own local meridian—came the question of the other lines on the map. The teacher gave a graphic account of the sinking of the ship on the Pacific coast. Then the question was asked, "How did they let the people on land and in other boats know of their distress?" The children answered, "By wireless—SOS." Then came the question "How did they let them know just where they were?" From this came the necessity for some way of locating places at sea. The study of latitude came as a result of a felt need on the part of the children to locate and relieve the people on board the *Alaska.* The problem was raised in a natural situation. It threw out a challenge to the children. They used their geographies and globes. After partially solving the question for themselves, by discussions and with the help and guidance of the teacher, they learned and formed conclusions in regard to latitude. They took great interest in placing ships in distress in various parts of the world and locating them by latitude and longitude.

They also figured at what time the news of the ball game was received in different cities of the United States.

Problem 5. How to make the girls understand baseball. One boy in the class was especially indifferent to school, but exceptionally interested and well informed in baseball. This problem came as his great opportunity. He was leader of a group who got together and organized to explain the game so clearly and plainly that even the girls could understand it. They made out and observed the following outline:

1. History of baseball.
2. Nature and rules of the game.
3. Diagram drawn on board and explained.
4. Number of players and their positions in the game.
5. Exhibition ball game for the girls.

Problem 6. To find out about the Big Leagues and the World's Series. This started a campaign for information on baseball of the present day. Current events on baseball were brought and read in class. The *Mid-Week Pictorial* of October 6 was brought and the pictures explained. Fathers were consulted, and groups organized and prepared to explain the Big Leagues and the World's Series. Reports were made on the following topics:

1. A new invention of the catcher's mask (from an article in *Popular Science Monthly*, November, 1921). This brought an interesting informal discussion, the forming of judgments and comparisons of the old mask with the new one. The boys who contributed this brought a regular mask and explained its use. They also showed the new one and told of its use.
2. Bulletin board made on which to publish the returns.
3. How a baseball is made (from an article in *St. Nicholas*).

Problem 7. To determine the history and prominence of the Big Leagues and their games.

1. Teams of 1869.
2. Chicago and All-American World Teams.
3. Honoring of games by presidents and a king:
    a. Taft.
    b. Wilson.
    c. Harding.
    d. King George of England.
4. Illustrations in *Mid-Week Pictorial* for October 6, 1921.

Problem 8. What are some of the characteristics of good baseball players?

1. Babe Ruth (from an article in *Popular Science Monthly*, October, 1921, pp. 19–21, 110).

a. Eye, ear, brain (nerves function properly).

b. Brain instead of brawn.

c. Babe Ruth would have been a home-run king in any line of activity. He received a high average in every mental test.

d. The boys told how judgments must be formed quickly in the game, coöperation, teamwork, sacrifices, etc.

e. The teacher read "Casey at the Bat." The boys explained the game as told in the poem.

Problem 9. How do the players keep in good condition during the season?

1. Proper food.
2. Sleep.
3. Outdoor exercise, and sleep in well-ventilated rooms.
4. Abstinence from the use of alcohol, tobacco, coffee, etc.

Several chapters in the text on hygiene gave suggestions which helped on this problem.

Problem 10. How do we determine the batting averages of the Big League players? These were cut from the daily papers, and the meaning of A.B., B.H., S.H., B.B., was explained by the children. In their arithmetic they found tables of the records of many famous players. Many problems were made from these.

One of the strong features of this project is the manner in which outside interests were used as a means to arouse interest in school activities. It is an illustration of taking advantage of an existing situation and of turning it to good account. Notice how the scope of the project expanded under the tactful guidance of the teacher until it included some of the fundamental principles upon which the geographical phenomena and industrial life of the world depend.

The manner in which the children found themselves confronted with the problem of the difference in time in the various sections of the United States appealed very strongly to the native instinct of curiosity. A genuine perplexity challenged even the most backward boys and solicited their interests and desires so that they accepted the challenge, a most favorable situation for the law of readiness.

Again, note how the laws of health took on a new meaning under the stimulus of the health problem in connection with the players of the World's Series.

The possibilities of the project are well shown in this case. It furnished a situation which led the children into a state of inquiry relative to some of the fundamental principles of geography; that is, the revolution of the earth, the time belts, the change of time, latitude and longitude.

However, the greatest result was that of arousing interests and activities in a timid class. Through the native impulses for play, curiosity, construction, and manipulation the pupils were led into an attitude of inquiry and of scientific investigation. (See Native Equipment, on page 3.)

This attitude of mind is a most fundamental factor in the process of learning. We are depending upon it for the operation of the laws of learning (see Part One, p. 16).

In this project we are impressed with the manner in which outside interests were skillfully guided into school activities. What had been a listless, timid group of boys were converted into a live, enthusiastic group of school children. The drive, or inner urge, was transferred from the teacher to the children as they gathered materials and information necessary for the satisfaction of felt needs which grew out of the project. They began to understand and appreciate a need for the tools of learning. Moreover, they were practicing, in a small way, the principles of democracy, such as initiative, self-reliance, coöperation, and leadership. They were acquiring right attitudes toward school life in general.

CHAPTER VIII

PROJECT: THE SWISS ALPS

This project, based upon the study of Switzerland, was finally worded thus: "To make a representation of the Swiss Alps to show how the Swiss, with very few natural resources, adjust themselves to environment and convert obstacles into advantages."

While Joe, the engineer, fixed the tunnel so that trains on their way to Italy could go under the mountains, Frank and John made the glacier between the peaks. Meanwhile Frances and her assistants placed the cattle and the goats on the mountain side.

This scene, not at all imaginary, took place in a sixth grade where the project method had been used quite extensively throughout the school year.

On a table two mountains of clay were made, and on these mountains were placed all the representative things of the country of the Alps. By the use of salt, flour, and water a glacier was made between the two peaks; descending from the glacier was a swift-running mountain stream. Along the stream, where the icy waters flowed very swiftly, there was a little mill turned by "white coal" (water power), since Switzerland is lacking in black coal.

At the base of the mountain, surrounded by forests, terraced vineyards, and fields of barley and rye, was a monastery from which the great St. Bernard dogs sallied forth after winter snowstorms. High above the tiny chalets were the goats and cattle whose milk the farmer folk converted into cheese and the famous Swiss chocolate. At the summit of the peak there was a tiny group of tourists, roped to their guide, who had just reached the summit, where they planted the red flag that told the universe of their achievement.

Around the room there were pictures of the tourists, mountains, and glaciers, while at another table there were silk and embroidered products as well as examples of Swiss wood-carving.

THE TEACHER'S AIMS

Ultimate. In carrying out this unit of activity the most important returns would be, perhaps, intangible, immeasurable results, such as attitudes, outlooks, ideals, character effects, coöperation, participation, and leadership in communal life. When we consider such important, intangible results as the chief aims of education, we give a closer and more subtle study to the procedure which will give opportunity for the developing and crystallizing of such desirable characteristics. In the past, in the organizing of subject matter, the aims have been in more measurable returns, based on what children should know and what they need in adult life. In this work more thought has been given to the kind of citizenship we desire, also to the ideals and attitudes we wish our children to have.

The purpose in this project is not to give concepts of Switzerland. Concepts, no doubt, are gained from pictures, reading, and imagination before the object can be represented. Giving opportunity for the expression of a child's natural capacity for creation and manipulation should be a purpose in objective work. One purpose here was to give a part in the communal life of this schoolroom to the boys and girls whose mental capacity prevented them from delving far into the problems. In accordance with his mental capacity, each pupil planned, judged, and executed. For example, a little boy whose I.Q. was under 70 was overjoyed when he made better than anyone else in the class the little chalets that were to be placed on the mountain side. Except where classes have been organized and classified according to the results of mental testing, there are children of varied mentality. Why not provide for all?

Immediate. Other more immediate aims measuring the social value of their work would be (1) to show in what way man reacts to the earth's stimuli, how he is dependent on nature, how he may adapt himself to geographic conditions, and how his various pursuits are earth-determined; (2) to teach the geographical principles which underlie Swiss life and customs, to show in what way the Swiss people have responded to geographical influences and are turning to advantage the resources and obstacles to which they are heir, and to represent geographically the homes, resources, and industries of the Swiss; (3) to obtain a fundamental, working knowledge of Switzerland and its inhabitants and to show the relationship of their contributions to the rest of the world.

Throughout this project practically all the school arts were utilized; geography, oral and written language, penmanship, spelling, arithmetic, reading, art, and history were all included and necessary for the successful culmination of the project (see "The Project," on page 41).

The chief concern in the mind of the teacher was: "Are these boys and girls learning how to investigate, how to find and use sources of information? Are they developing good habits of thought and study? Are they making accomplishment a habit?"

It is interesting to discover that while not being taught for measurable results, children working with a purpose test very high in the measurable facts of skill and knowledge. In fact, at the close of the school year these sixth-grade pupils surpassed the standards for high-school seniors in Monroe's Silent Reading Tests and tied with a class of thirty seniors in Teachers College (see page 156).

ORGANIZATION

One of the great problems of project-teaching is organization. Many seem to think that the children go ahead and work with no plan and no organization. This work requires the most careful planning on the part of the teacher. There is a best way of doing things to save time and to give opportunity for real thinking, purposing, and planning on the part of children. Any teacher who is not cognizant of this fact is apt to be a failure in this work.

In answer to the many questions from students and teachers, such as, "How did you start it?" "How in the world did you get it going?" this part has been written. It is the purpose to show the organization of this work. Stenographic reports were taken of portions of the work, showing what actually took place in the room.

The situation out of which this activity grew, while raised naturally, was not really an outgrowth of a natural situation. As long as there are rigid courses of study it is well to adjust the activities to them, as was done in this case. Switzerland came next in the course of study. The teacher had in mind to make some kind of a representation out of paper because she herself dreaded the confusion caused by the children's working with clay. The following report explains how the reasoning of the class showed clay to be more feasible.

The story of Heidi was used to lead from one activity to another in a natural way and in a natural situation. In the following stenographic report it can be seen how the teacher guided the children away from their first idea, to dramatize portions of "Heidi," to the constructing of the Alps. This is perfectly legitimate on the part of the teacher. It is her business as a teacher to know the next step needed in their development. It is her duty to question the social value of activities and to lead them to worth-while content.

In preparing for the silent-reading feature of the Literary Contest the children read Spyri's "Heidi" at home, many of them completing it in two nights (see Chapter IX).

After the book had been finished and interesting features of Swiss life related, the teacher asked, "Who can give us a picture of the life of the Swiss people and the little country where Heidi lived?" The description being satisfactory, she continued, "What more might we do to make clearer to ourselves Swiss life and customs, as well as to let visitors know what we are doing?" The following stenographic report will show how this project was launched.

LAVADA. I should like to dramatize the story of Heidi. We might dramatize some of the best parts.

SYLVIA. Different ones of us might be Heidi, Klara, Peter, the alm-uncle, and the rest.

SARAH. We might dramatize the scene where Heidi goes up to the alm-uncle's house and where she goes to live with Klara.

TEACHER. Those are good suggestions, and we might carry out some of them; but what could we do to have something to show the visitors as well as to make very clear to ourselves the kind of country in which Heidi lived and the different things that she and her friends did?

ROY. We might make a hut out of matches like the one in which the alm-uncle lived.

DOROTHY. And we might make some goats out of cardboard and show them feeding on the Alps.

ELMER. We ought to show the mountains. We could make a background out of cardboard to represent them.

TEACHER. But how could we show the goats on the mountain side?

ELMER. We could fasten them against the side of the mountain.

TEACHER. What about the little house? How could it be placed on the mountain?

ELMER. We could make the mountain so that the house would stand on it by bending the cardboard.

JAMES. I think it would be better to make the mountains out of clay. Several other boys and I could get some clay Saturday, and we could make our mountains like the sphinxes we made for the sand map of Africa (see page 57).

WARNER. I don't think clay would be very good, because it gets all over the floor and it's so hard to clean up.

JAMES. If we used clay, we could clean it all up when we finished; and, besides, clay is more substantial than cardboard, and it looks more like real mountains.

As there was so decided a difference in opinion a vote was taken, and the majority were in favor of using clay.

One of the boys went to the board and made a list of the materials needed and of those who volunteered responsibility for them.

From the first the teacher had in mind to construct a Swiss mountain scene showing in what way the Swiss have made the most of their resources and converted their obstacles into advantages. Having succeeded thus far in getting the children to decide on a scene to be made of clay, she proceeded in the following manner, to bring out the ideas of showing the industries:

TEACHER. I was surprised that you wanted to represent the story of Heidi, because it is only a fourth-grade story. Sixth-grade children ought to be able to bring out and show the important things about Switzerland.

BEATRICE. We could make a waterfall, to show how the Swiss get power from white coal.

ROBERT. And we could make some tourists climbing up a mountain, to show how the Swiss make money from the beautiful scenery.

CLEO. We could show the forests, and the cattle feeding on the Alps.

ROBERT. When we finish it we could invite some other room in to see it.

After a project has been raised and the children are anxious to get started, there comes the problem of organizing so as to get the best planning and executing from the children.

The children were now ready to make the Alps on a table and to show how the Swiss people make a living. The next thing to do would be to get them to decide what they are to make. It is a good idea to find out first what they already know. After some discussion each one listed on paper all the things he knew about Switzerland which could be represented. One boy put his list on the board. Others added to it. It was then suggested that they could find more things in their books. Allen's "New Europe" was found to be a gold mine of valuable information. Most valuable silent-reading lessons took place in this connection. Many objects were added to the list, which, when completed, read as follows:

goats
waterfalls
tourists
railroads
cattle
Alps
mill
St. Bernard dogs
sheep
glacier
chalet
lakes
trains
alpenstock
stream
hotels
patchwork fields
bear

The next problem was that of "materials" needed to make the objects, a list of which was compiled as follows:

clay
pins
wood
glass
cardboard
matches
flour
paint
cotton
glue
salt
twine
yarn
wire
tinfoil
pebbles

Different children volunteered responsibility for various materials. A group of boys who rode bicycles were to bring the clay from the river; others were to bring matches, cotton, flour, salt, etc. The materials were to be kept on a table until needed. Groups were formed which planned to make certain things so that each object was provided for and each child had a part in the planning and executing.

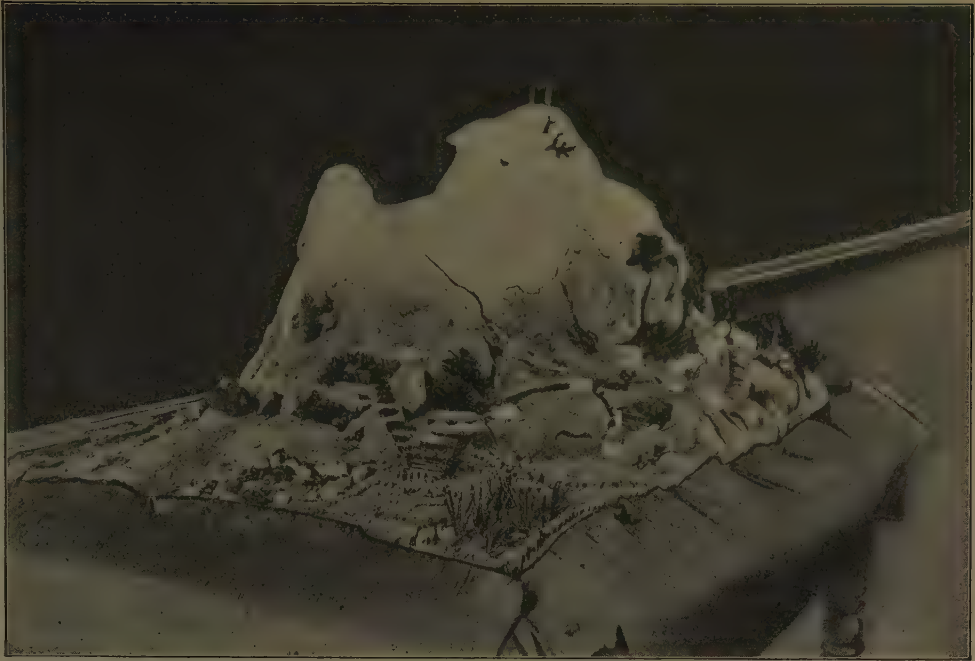
By experience in the past the pupils had met and solved the problem of the necessity for a standard of measurement. Very early they discussed and decided to use a chalet as the standard, making everything else in proportion to that. On a previous occasion the children had been allowed to start their work without much planning, and soon met with difficulties, thus learning through experience the necessity for planning, making patterns, and organizing materials at the beginning of a piece of work. As soon as they knew what they were to make they began hunting pictures and sources of information which would help them. They consulted the teachers and one another as to the best way to represent the objects they were to make.

The following morning groups and individuals reported. A wealth of material was brought in about the resources, industries, exports, imports, cities, etc. The materials for construction were assembled, and work began. Pictures, books, maps, magazines, newspapers, and guidebooks were at hand, all the children working in groups for the successful culmination of the undertaking. Some did much more reading than others; some took more part in planning and organizing. A careful record was kept of each child's work, showing that the capacities of each were utilized.

After attention had been centered on Switzerland the children were very much interested in finding it on the map.

Map Study

1. Could you cross Switzerland in a day? This led to computing the length and width of that country by the use of a scale.



A CLAY REPRESENTATION OF SWISS LIFE

2. The comparative size of Switzerland, France, and Missouri was estimated and verified with tables of areas.

3. By the use of density-of-population maps the children compared the number of inhabitants in Switzerland with that of Missouri and other places which they had studied.

4. From the colored map they were able to tell a great deal about the mountains, rivers, slopes, etc.

5. The climate of Switzerland was worked out from its latitude and altitude, and compared with countries already studied, especially the United States.

6. Many facts regarding the customs, home life, and industries of the people were learned through the use of pictures and from tourists who had visited the country.

In the map study it was discovered that Switzerland had very few natural resources. The children had given a play earlier in the year, entitled "Uncle Sam's Resources." They reviewed these resources and brought out the following general facts: the distinction between exhaustible and inexhaustible resources, the importance of conservation, the use and abuse of resources, and the patriotic viewpoint.

Problems

The following problems were brought up by the children and solved in connection with the working out of this project:

Problem 1. What are the natural resources of Switzerland? This brought out the minerals, water power, timber, fertile soil, and beautiful scenery. It was decided to show as many of these on the clay mountain as would be practicable.

Problem 2. How could so many people live and prosper in so small a country with so few natural resources? In answering this query the children learned much about the manufacturing of small articles through the use of water power, the tourist trade, the system of taxation, railroads, farming, dairying, embroidering, wood-carving, and the obtaining of fertilizer from the air.

Problem 3. How could Switzerland, with no coal, become an important manufacturing country? This led the children to a realization of the value of "white coal" as a substitute for natural coal. The fact that the country was centrally located and that the people were unusually intelligent and skillful were found to be important factors in the manufacturing and industrial life of Switzerland.

Problem 4. Is all the manufacturing carried on in the cities, as in other countries? It was found that embroidering, wood-carving and cheese-making are the chief activities of the homes, many of which are not in the cities.

Problem 5. Why are there so many cattle and goats on the mountains? This brought out the dairying and chocolate industry of the mountaineers.

Problem 6. What kind of people should you expect to find in Switzerland? This brought out the national characteristics of the Swiss people as portrayed in the lives and works of their great men—Pestalozzi, Agassiz, and the legendary hero William Tell. Much was learned of their history, form of government, and religion.

Problem 7. How do the people build railroads in such a mountainous country? From pictures, descriptions, and tourists the children learned of the wonderful engineering skill of these people, as shown in the manner in which trains climb the mountains in corkscrew fashion by means of series of tunnels. The St. Gotthard tunnel was represented as passing through the mountain on the sand table.

These problems were assigned to and worked out by the various groups of the class. The leader of each group reported on a certain problem to the entire class; a lively discussion never failed to develop.

THE CLIMAX

After the mountain had been completed and the great amount of material about Switzerland had been organized, everything was ready for the grand finale.

Pictures were arranged on the chalk rail, and Swiss souvenirs were brought to school. One outline was made to include all the work on Switzerland. Each group leader had his problem worked out, and had arranged the subtopics for his group.

After an explanation of the mountain for the benefit of the visitors, the children discussed some of the important geographical problems which concerned Switzerland. An effort was made to discuss only those things which are worth while; thus the children were developing power of sound judgment. As far as possible the talks were illustrated by pictures and souvenirs.

A detailed account of each pupil's work was kept and constantly reviewed by means of one-word tests and games involving the facts learned about Switzerland. One of their favorite games was played after the fashion of a baseball game. The school would divide into two equal groups. Each group would prepare questions based upon their study of Switzerland. Each side chose one of its members to be the pitcher and another member to be the catcher. Someone was selected to be the umpire, while another was to be the score keeper. The side at the bat would line up along the wall, while the pitcher from the opposite side would throw a question to each batter as he in turn stepped up to the plate. If the batter answered the question correctly, the umpire would call out "Fair ball." Then the batter would take his place at the foot of his line. If he missed the question, the catcher was supposed to catch it up quickly and answer it correctly, when the umpire would call "Batter out." Three outs put the side out, and then the two divisions exchanged places. These questions were usually censored by the teacher before they were used. The following is a sample used in one game in connection with the Swiss Alps: "What is the capital of Switzerland?" "What city is noted for silk?" "Give three natural resources of Switzerland." "Name three important industries." "Name two tunnels under the Alps." "Name a great hero of Switzerland." "Name three industries carried on in the homes." Etc.

This was simply a means of drill on facts which had already been thought out in connection with the solution of the project.

RESULTS

The completed mountain was an artistic as well as an accurate representation of Swiss life and industries. To the right were two mountains rising abruptly on two sides, but sloping more gently to the left, where there were placed tiny chalets, a monastery, terraced vineyards, fields of rye, oats, and barley, orchards, and stacks of hay. On the tiny flower-studded Alps, high in the mountains, were goats, and a little lower were cattle grazing on the tender grass.

The blinding snow and ice and a glacier displaying a yawning crevasse were formed of salt, flour, and water, and away in the dizzy heights was a little caravan of yarn men who had just attained the summit and were planting the red flag of victory. At the foot of the mountain was the hotel from which the tourists had started early in the morning.

Proceeding from the melting glacier, and fed by the melting snows, flowed a turbulent mountain stream at the side of which was a mill which generated electricity for lighting and manufacturing in the city below.

One side of the mountain was wooded with both softwood and deciduous trees. Under the mountain was a tunnel through which the trains rushed on to Italy. Each object on the mountain was chosen because of its importance, and the children proved to be capable of grasping fully the great geographical principles which they represented. The completed project was considered so good that many visitors came to see it, and several other rooms were invited to derive some benefit from it.

Although only four days, including the last day for the summary of the country, were used for the study of Switzerland, a considerable amount of material was collected and organized, and the sand table showed much study and handwork.

The children showed a splendid spirit of helpfulness throughout, praising, criticizing, lending material, hearing each other's recitations, and drilling one another.

The work was ample and sufficiently varied so that each child could find something to do in which he was interested, and everyone had a share in the success of a whole-hearted, purposeful, vigorous activity which took place in a social situation and in accordance with the laws of learning.

CHAPTER IX

PROJECT: A LITERARY CONTEST

THE TEACHER'S AIMS

Ultimate. (1) To give the children an appreciation of the meaning and beauty of good literature; (2) to induce them to be more discriminating in their choice of books and to make them better acquainted with the masterpieces in children's literature; (3) to instill in them the habit of reading good juvenile books; (4) to give them a better command of English: to develop in them the power of expressing their thoughts clearly, concisely, and forcibly; (5) to develop the power to *do*; (6) to develop good habits of thought and study.

Immediate. (1) To eliminate the more flagrant errors in English; (2) to improve the articulation and enunciation of the individual members of the class; (3) to learn to get the thought from the printed page accurately and rapidly; (4) to give opportunity for improvement in written composition; (5) to develop powers of organization, originality, and initiative.

MATERIALS

The following material was used in connection with the working out of this project: Sherman and Reed's "Essentials of Teaching Reading"; grammar text; Young and

Field Readers; Elson's Readers, Books Two and Three; Beacon Readers; book list (furnished by the teacher); various recitation books; packets of pictures by Corot and Millet; Monroe's Silent Reading Tests; books of stories for dramatization; Allen's "New Europe"; Atwood's "New Geography, Book Two."

PROCEDURE (EXPLORATION)

In taking Monroe's Silent Reading Tests it was found that the median in comprehension was twenty-seven. While the median for sixth-grade pupils is only eighteen and a half, yet some were weak in ability to read and get the thought from the printed page. In the geography work there seemed to be a great deal of time wasted because of inability to get the exact thought and meaning of the author.

In a spelling match with another room, the children felt that they did not speak as plainly or distinctly as did the children of the other room. They decided that it would be worth while to have some drills in pronunciation.

Articulation drills were taken from "Essentials of Teaching Reading," by Sherman and Reed. Exercises were placed on the board, and about five minutes a day were given to drill. Children who especially needed this drill worked in groups in free time. Drills in sounding consonants were especially emphasized; for example, *bat*, *brute*, *rub*, *tub*, *battle*, *robber*, *button*.

Most of the work during the year had been along the project plan. It was felt that the majority of the children had advanced and developed very rapidly, but there was still the minority, who might not be up to grade and needed drill work and help in the use of the tools of learning.

The aim in the teacher's mind was to organize a unit of work which would give a definite goal toward which the children would work with genuine interest; the scope of this project would include definite work, drill, opportunity for organization, and discrimination between principal and subordinate ideas.

A literary contest seemed the best way to attain the goal, and the working out of it would involve the opportunities desired by the teacher. It was decided to prepare for a literary contest, presenting a scope which would involve a variety of work so that each child could excel in his line and get practice in all. The contest would take place some time near the end of the term (ten weeks). The mothers were to be invited to hear the results of the contest. Each child was to participate and to do each of the things planned. A record was kept of the results of each child's effort.

ORGANIZATION

In all work during the entire year a great deal was done in groups, the children being grouped according to ability. This grouping made it possible for them to develop and advance with the work naturally. In the groups containing the accelerated children much more work could be accomplished. Their own capacity was the limit of their assignment. They, having leaders, had to learn coöperation also. The weaker pupils had the opportunity of excelling in their groups and of developing leaders. For convenience in the literary contest the children were arranged in six groups. In this way a child who was naturally slow would have opportunity to excel in his division. There was such a divergence in the mental ability of the various members of the class that unless some such method was employed the slower children would be discouraged and lose interest at the start. For the slow child to keep back the accelerated child would be, perhaps, even worse. A record was kept of the work of each child in each event.

Scope of Contest

The work in the contest soon developed into definite and specific types of English as follows: (1) The Character Sketch, (2) The Oral Theme, (3) Essay, (4) Extemporaneous Speaking, (5) Recitation, (6) Picture Description, (7) Silent Reading (comprehension and speed), (8) Dramatization, (9) Book Report, (10) Myth or Legend, (11) The "Never, Never List" (common errors), (12) Letter-Writing.

THE CHARACTER SKETCH

After reading the King Arthur stories the children were quite impressed by the courage and bravery of the king. They were asked to name words that they would use in describing the king to one who had never read of him. A list of adjectives was given that might fittingly be applied to him. The children were told that a short description of this order, delineating one's character, is called a character sketch. They decided that they could write a short paragraph describing King Arthur. A short sketch of

Lincoln, written by the teacher, was shown to them for guidance and reference, as they expressed ignorance of how to begin. The first sketches written told of the wonderful deeds performed by King Arthur, but did not describe his character. The children then learned the difference between a biography and a character sketch. The result of the second trial was excellent. The children learned, through their own experiences and efforts, the distinction between a biography and a character sketch.

THE ORAL THEME

The oral theme was not in the original plan for the contest. Some of the boys at that time, however, reported to the class some items of interest that they had read. The reports were so well given that the children suggested making the oral theme a part of the contest.

The topics chosen were current events and items of general interest. In giving the talks it was found that the greatest fault was a lack of organization of thought. The teacher gave a talk one day to show the use of an outline in organizing and planning a speech. The topic sentence, also, was introduced and made a part of every recitation. Notice how a "felt need" for better organizing and planning preceded the discussion. In this way the laws of learning were provided for (see Part One, p. 16).

ESSAY

When the class visited the dairy in connection with a previous project, the general manager offered a prize to the child who wrote the best essay on milk. They were to tell what they had learned, at school and from their trip, about dairying. The children selected their own subjects. Outlines were written to make their essays more logical. The winning essay was selected by the class. It was "Milk before and after its Trip," by Theodore. The prize was a beautifully bound volume of "The Life of Theodore Roosevelt."

EXTEMPORANEOUS SPEAKING

As the school year was nearing the close, some review seemed necessary to fix certain facts about the countries of Europe which had been studied by the project method.

For this large problems were written on the board. Each pupil selected one of ten or more problems on which to make his talk. The pupils were given fifteen to twenty minutes to get information and arrange facts. They had talks on all the problems in this way, thus reviewing geography and at the same time having extemporaneous speaking. Some of the talks were on "Why has Holland given over acres to tulip-raising when she cannot raise enough food to feed her own people?" "Why is there so much wine-drinking in France?" "Why did our soldiers bring home so many silk souvenirs?" Etc.

RECITATION

Interest in recitations was aroused when one boy learned Tennyson's "Brook," "The Ride of Paul Revere," and several other poems. Another boy, because he had studied about France and Belgium, learned "In Flanders Fields." These boys soon had several rivals. The children chose their own selections, although the teacher approved of them before they were memorized, and offered a suggested list of poems after the children had begun to ask her for more poems. Many of the children were so interested that they learned several poems. The result of the memory work was most satisfactory. Others began asking for poems and learned them. The children asked for regular poem periods in which they formed groups, each child reciting some poem to his group. The best was selected from each group, and when the class came together the entire school heard it. The contest began to be not only between the ones who recited the poems best but also between the ones who could recite the greatest number. The poem hour became one of the most enjoyable, and it was eagerly planned for. All the children learned at least three poems, while Sol could say thirty-four and Edgar twenty-seven. Most of the children learned from seven to ten poems during the ten weeks the contest was on.

PICTURE DESCRIPTION

The work in description of pictures was excellent. Pictures by Corot, Millet, Landseer, and Bonheur were used. The children brought pictures and described them, beginning with a topic sentence. They told of the objects in the foreground and then of the minor details. They were required to tell things exactly as they saw them (moral value).

For practice in enabling them to surpass their own records in the Silent-Reading Comprehension Test, the teacher and Normal students in training made their own comprehension tests from geography material. Thought questions were placed on the board, and a time limit was given for writing the answers. Vocabulary tests were used. Several countries in Europe were studied in this way. Emphasis was placed on getting important facts rapidly from books. The children learned how to use books, how to study, and how to select information.

SILENT READING

It was realized that all reading should not be for rapidity, that beautiful literature which was read for feeling and beauty should be read for appreciation. It was also realized that to keep up with all the reading one wished to do, a high rate of speed and comprehension must be acquired. Geography material was used for this, definite work being assigned in the form of problems. A time limit was used in getting the work. The countries of Europe were studied in this manner, as is shown in other projects in this volume. The children developed power in speed and comprehension, and in the ability to use books.

DRAMATIZATION

For dramatizing, the children were divided into several groups. One group dramatized the story of William Tell when they were studying Switzerland. The story of "Johnnie and the Milk Fairies," written in dramatic form in connection with another project, was given at the time of studying dairying. Several King Arthur stories were dramatized, one child being selected in each group to direct. Two of the boys read "Penrod," by Tarkington. Outside of school time they dramatized the skit in which Penrod met Rube Collins. They later gave it for the class. In each event the best was selected to be given later for the mothers' meeting. The fame of their dramatic ability spread even outside of their "own country," and they were asked to give an entertainment at Teachers College.

BOOK REPORT

The books which were read and reported on were from a list of two hundred and seventy-five good books for children recommended by the teacher. Such books as "The Painted Desert," "Master Skylark," "A Tale of Two Cities," "Heidi," and "Hans Brinker" made up the list. Some of the more advanced children read "Ben Hur." A few of the more recent books were added to the list of classics. Oral or written reports were given in the groups, to the teacher, or to the class.

The book reports, for the most part, followed this order of procedure:

1. Author
    - Other books
    - Contemporaries
2. Characters
    - Foreground
    - Background
3. Theme
4. Most enjoyable feature
5. New words or ideas

MYTH OR LEGEND

In the study of Norway the children frequently found mention of Thor, Loki, Sif, and other Norse gods. They wanted to know more about them, for in studying the gods of a country they learned more of the nature of the people of that country. Each child learned and told at least one Norse myth. One group wrote an original myth, "Why the Cotton flies in Springtime."

THE "NEVER, NEVER LIST"

In helping one another with the pronunciation of words the children discovered that simple words are often mispronounced. They conceived the idea of compiling a "Never, Never List," a list of frequently mispronounced words which they would never, never mispronounce again. The list was made up of words that they found they had been mispronouncing and of words they heard other people pronounce incorrectly. If they heard a word regarding the pronunciation of which they were in doubt, they would ascertain the correct pronunciation before using it. The list was placed on the board and used by the children until new habits of correct usage were established. The following list was compiled during the life of this project: *acclimate*, *garage*, *chauffeur*, *aviation*, *museum*, *perfume*, *forehead*, *cantaloupe*, *envelope*, *apparatus*, *romance*, *advertisement*, *apricot*, *toward*, *often*, *aëroplane*, *inquiry*, *route*, *magazine*, *recess*, *address*, *iodine*, *drama*, *data*, *coupon*, *civilization*, *alternate*, *diphtheria*, *isolate*, *bade*. The "Never, Never

List" also included the more common errors in language, such as the wrong forms of the verb, the incorrect use of pronouns, the use of adjectives for adverbs, etc.

LETTER-WRITING

One of the most interesting events to the children was that of letting-writing. Although we were trying to correlate our work, we did not correlate letter-writing and geography, a thing which so many authors recommend. It seemed that such correlation would result in a forced situation and be meaningless to the child. The letters written were informal, letters that we should write in everyday life. The children wrote to Frank, a boy who had moved from their room to another city. They told of their own affairs, things in which they were interested. Those who did not write to Frank wrote to any friend to whom they owed a letter. Many wrote letters of condolence to their former teacher, who recently had lost her sister.

THE CONTEST

After the best of the group and individual work had been selected a splendid program was arranged. Friends were invited to enjoy and judge some of the work. There was never a time when the spirit of the children lagged, because there was enough variety to avoid monotony and because the goal was of genuine interest to them. The reactions from the children and the parents were satisfying. In the contest it was arranged so that each child participated in some way.

ACCOMPLISHMENTS

The success of the project should be measured in terms of actual knowledge, habits or skills, and attitudes acquired by the children during the ten weeks consumed in this particular piece of work. Two factors enter into the amount of knowledge acquired: (1) the amount of new subject matter covered by the pupils and (2) the attitude or spirit of the children toward that subject matter.

In this particular project no definite amount of reading was required beyond a minimum amount which the class voted to require from each pupil, each pupil being expected to participate in at least one of the contests. However, the principal incentive or drive starting the work in this project was the splendid spirit of forty-seven pupils, with the desire on the part of each individual to acquit himself with credit to his group and to the school at large and to contribute something worth while to the success of the cause. The extent to which this drive led to a real liking or love for good literature is shown by the following report of the amount of reading and the number of poems learned by the individual members of the class under conditions which provided for absolute freedom on the part of all as to the amount of work covered.

A list of some fifty poems had been suggested by the teacher as suitable for memory selection; likewise a list for reading, of some two hundred and seventy-five books suitable for upper-grade children.

The number of books selected from this list and read by each pupil varied all the way from two to thirty-two, as shown in the following table:

TABLE I

Number of Pupils	Books Read	Number of Pupils	Books Read	Number of Pupils	Books Read
1	2	7	8	4	14
1	3	2	9	2	18
1	4	3	10	1	19
4	5	3	11	1	22
4	6	2	12	1	27
6	7	1	13	1	32

The number of poems selected from the list, memorized, and recited by each pupil is shown in the following table:

TABLE II

Number of Pupils	Poems Learned
1	1
15	2
12	3
6	4
6	5

Number of Pupils	Poems Learned
2	7
1	14
1	17
1	27
1	34

The above tables show the variation in the amount of material (books read and poems learned) covered by the individual members of the class during ten weeks. For the kind of books read and poems learned see the list in the Appendix.

Compulsion by the teacher was totally absent. The drive (see Part One, p. 9) came from a keen desire on the part of both individuals and the class as a whole to make a creditable showing in the final contest. Literary characteristics which make a book or a poem worth while were constantly kept before the class through suggestions and questions by the teacher, until finally many of the pupils had developed a keen appreciation of what constituted good literature. The method used was designed to furnish an opportunity for practice in appreciation of good literature for children of upper grades, as well as in the judging of good literature. Satisfaction or annoyance resulted in proportion as success or failure was reflected in the approval or disapproval of the class or of the judges in the final contest.

Time limit for study and work was a constant factor. Only the regular allotted time for reading on the daily program (about thirty minutes per day) was consumed in this project. The manner of procedure during this thirty minutes often followed this plan: the school was divided into groups of some five or six pupils each. The teacher would request each group to report the progress of each of its members as to book reviews, poems memorized, essays written, etc. Each group was expected to have a leader who was responsible for directing its activities. One group might go into a vacant cloak room, another into the hall just outside the room, and others to various parts of the room. In this way each group would be alone as far as the facilities at hand would permit. Let us follow one group as typical of all the groups. The leader will ask, "Who is ready to make a report on a book?" or, "Who has a poem learned ready to recite?" and so on. Usually someone is ready to report a piece of work which he has prepared, perhaps a book report. Then the pupil proceeds to make this report to the group, following the previously accepted plan for such reports. The leader and other members of the group will then point out weak places, ask questions, make helpful suggestions for improvement, and decide whether or not the report is ready to be given to the entire school. It may be decided that the person needs practice or drill in some particular line: drill in more distinct speaking, better organization of subject matter, greater familiarity with the subject in hand, etc. Again a report may be highly satisfactory, meeting the standards of the group for success. The pupil who wrote the report is now ready to present his work to the school at the first opportunity. The members of this group rejoice in the fact that they are to make a good showing before the entire school. While this type of activity is going on in the various groups, the teacher is on the alert. She passes from group to group and, by giving pertinent suggestions and pointed questions, guides the pupils into good habits and right technique of study. She helps them to establish standards in right study and to formulate a basis for right judgments. Here is where the teacher does her greatest work in establishing good habits of study.

As soon as a group is ready with a report the leader notifies the teacher, who calls the entire school together when a sufficient number are ready to utilize the remaining thirty minutes allotted to this recitation. This is a time for sharing individual and group experiences with the entire school. A leader of one group, in a statement to the class, will introduce one of his members who is ready to report on such and such a topic. The girl reporting is representing her group; she desires the feeling of success that comes from the approval of her peers as well as of her teacher. Success is followed by pleasure, and learning is the result. At the close of a report much interest is often shown in the way of questions or suggestions from the individual members of the class. The extent of success; hence the satisfaction, is in proportion to the interest shown and the intelligent discussion following a report. In this manner and with this spirit the time was devoted to this particular project.

In the beginning it was found necessary to utilize most of the time in group work, but later it became a problem to find time enough for the members of the groups to make their reports to the class. A situation was soon reached where much of the preparation of both groups and individuals was done outside of school hours. Individual pupils were constantly besieging the teacher for an opportunity to report on some book they had read or to recite some poem they had learned. Finally, because of lack of time, much of the work was reported privately to the teacher at odd times or to the school on special occasions. Eventually the problem of the teacher was how to provide time and opportunities for reports on work, rather than how to get the work done by the children. This is a good test of a method of procedure. Will the pupils, on their own initiative, continue a line of work after a certain minimum requirement has been done? Some idea of the spirit of this class in this respect can be had from the number of books read and poems learned as shown in Tables I and II on page 148.

One of the typical problems in this type of procedure is that of leadership. As previously stated, this class of children had been divided into groups according to ability. In doing this the teacher relied not only upon her own judgment but also upon ability tests that had been given the children from time to time. In this situation apparent success was in reach of all, since each pupil was competing in groups where the abilities of its members were more nearly equal to his own.

However, it soon developed, even in this plan, that a certain pupil would dominate the situation in his own group. In this case the teacher would suggest to the leader that it might be a fine thing for him to try to make a good leader out of some other member of his group and that he might select someone to train in this respect. Thus the teacher soon enlisted a keen, sympathetic spirit among her stronger pupils for the success of the other children. It was no uncommon occurrence to see the stronger members express their joy and pleasure at the success of others. Selfishness was changed to unselfishness; self-interest was changed to an active interest for the success of others (see "Democracy," on page 27).

These children frequently gave demonstration lessons for the students in Teachers College. On one occasion a very glaring error was made by one of the children in his use of a verb phrase. As was customary, at the beginning of their work on the following day the children were discussing the strong and weak points of yesterday's demonstration lesson. One of them suggested that a most serious blunder was made when someone said, "I had wrote." The discussion at this point soon revealed the fact to the children that many of them were not clear as to the correct use of verb forms. It was decided to take up this topic in the regular scheduled time for language. When the language period arrived the various groups got together and spent part of the language time in finding out what their language text said about verb forms and their proper usage in sentences, vying with one another to get the most exact information and thus be ready for the general discussion of this topic when the class assembled for that purpose. In this manner the language period for the next three or four days was spent in an intensive and somewhat exhaustive study of this topic. Everything their text had to say on the use of verbs was soon understood. The uses of verb forms were constantly being brought up and pointed out by the children in all subjects. They were now alert to pick up each and every mistake in the use of verbs. This was now placed in their "Never, Never List," the meaning being, "Never again will an individual, group, or class allow an incorrect use of the verb to pass unnoticed or uncorrected." In a similar manner many of the more common errors in the use of English, both written and spoken, were added to the list. This included such material as commonly mispronounced or misspelled words, the use of certain punctuation marks, the correct forms of pronouns, etc. As most of the items in this list had to do with wrong habits, it was hoped that by placing them in the list the pupils would establish right habits. Note that these items were not forced in by the teacher. They usually were noticed through some embarrassing situation which created a felt need for correct information and right habits of usage. The pupils' motto was, "It is not a disgrace to *make* a mistake, but it *is* a disgrace to keep on making the same mistake after you once know better."

In this manner nearly all the technical and formal parts of the language text were taken up as they grew out of concrete situations in both oral and written discussions in connection with projects. Of course in this way the topics of the language texts were not taken up in the order of the book. Toward the end of the school year, however, the teacher would go through the language text and list the topics omitted, and in case these did not come into prominence through the natural activities in content subjects, they would be taught in the old textbook style. Thus, in the end, nothing had been omitted in the language text.

The "socialized recitation" is a most natural result to expect under such conditions. Pupils were getting practice in adjusting themselves to the social group, with due regard for others; in leadership and in following and respecting properly constituted leadership (see "Democracy," on page 27); in initiating fruitful discussions and questions about matters which are not clear; in initiating and accepting helpful, sympathetic criticism; in planning, judging, and executing in social groups; in raising and stating problems; in distributing the work of the project among themselves; in reporting to the class the results of previous study periods; in discovering their need for skill or knowledge of certain technique in working out the project in hand; and in planning and conducting drills or work in the mastery of the school arts.

The teacher seeks to stimulate the children to originate and plan projects and to pursue their purpose until the project is finished. She encourages, directs, and develops leadership among the pupils. By certain pointed, well-directed questions and suggestions she leads her pupils to set up standards of achievement and methods of study; she stimulates pupils to become efficient critics of their own work, to organize their work, to make new investigations, and to draw right conclusions. By means of thought questions she stimulates the pupils to raise and state problems which must be solved before the completion of the project in hand can be realized. During the conferences (recitation periods) she maintains the position of an umpire or referee.

During the study period (supervised study) the pupils work or study, individually or in groups, on problems or parts of a project which have been stated and assigned by the pupils and teacher in the recitation period. They move about the room to find material, to use the dictionary, maps, reference books, etc., purposely avoiding distracting conditions which prevent successful study. They become skilled, through practice, in investigating the validity of their tentative beliefs by reading from available sources to prove or disprove a supposed bit of knowledge. They become skilled also in determining what other facts are needed to complete their report and in revising the original belief or outline in light of their reading and investigation.

In order to have some definite way of evaluating the progress made by the children, the Department of Research and Efficiency gave standard tests at various intervals. Monroe's "Standardized Silent-Reading Tests" was used in this connection as follows:

On January 28, Test I, Form I, was given with a result of 115 in rate and 26 in comprehension. On April 8 the same test was given with a result of 149 in rate and 42 in comprehension. The sixth-grade standard in this test is

90 in rate and 18.5 in comprehension. The class did so exceptionally well in the second test that it was thought some gain must be due to the fact that the children had taken this identical test previously. Consequently, on April 15, another of Monroe's "Standardized Silent-Reading Tests" was given. Test II, Form I, was used this time, resulting in 162 in rate and 33.9 in comprehension. As 162 is the maximum median rate in this test, it was decided to give this grade Monroe's "High-School Test." On May 3, Test III, Form II, was given with the result of a median of 122 in rate and 35 in comprehension. This is a most remarkable showing for a sixth grade to make when we remember that the standard in this test for seniors in high school is 100 in rate and 32 in comprehension. This same high-school test was given about the same time to the seniors in Teachers College with results almost identical with those of the sixth grade.

Of course this particular project cannot claim all the credit for this remarkable achievement by these children, as other projects along various lines contributed much to the final result.

Had we suitable standard tests for measuring the spirit and attitudes of the children toward school and school work, the showing in this respect would be equal if not greater than was the showing in reading.

CHAPTER X

PROJECT: THE FARM

This project was worked out by a group of forty-five girls in Teachers College who are studying to be kindergarten or primary teachers.

Following a Halloween party the group began making plans for the Thanksgiving celebration. They discussed the possibility of depicting the story of the first Thanksgiving, showing the departure of the Pilgrims from their homes, their landing in this country, their struggle for existence, and their first Thanksgiving dinner. Someone suggested that the historical setting might be omitted and the Thanksgiving dinner be shown to be the culmination of all the activities of the harvest season—the gathering of the fruits and vegetables, the storing for winter, and the final giving of thanks for the plentiful harvest. It was decided that kindergarten and primary children would be more interested in the latter phase of the festival, since the historical interest does not develop until later. This plan led to a discussion of farm products and places necessary for keeping them. Various members of the class who had visited farms described the bins and granaries for storing grain, and the caves and cellars for keeping fruits and vegetables. This project finally included a consideration of all the farmer's activities in making ready for the winter, the provision of comfortable quarters for the animals as well as the preparation of places for storing the fruits, vegetables, and other products.

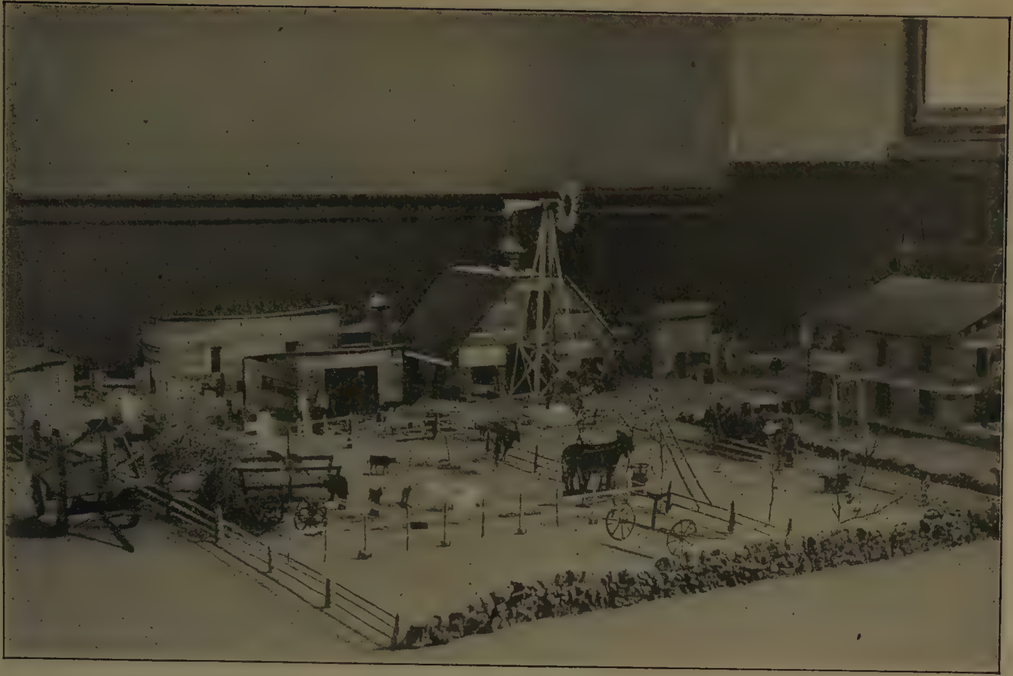
The students finally decided to take for their Thanksgiving project the construction of a farm which should show the necessary preparations for winter.

The class considered, first, the constructive possibilities and decided that their farm should have a house, a garage, a barn, a hog house, a chicken house, a granary, and a tool shed. Suggestions were made that they needed a meat house, an ice house, and a dairy. As their farm was to be a typical one they rejected these suggestions, for many farmers do not smoke their meat, do not find ice-making profitable, and separate their milk and sell the cream.

After some discussion the class decided to begin work on the barn and house, since these are the most important buildings on a farm. General characteristics of these buildings were brought out; and five groups, with three girls in a group, were selected. Each of two groups was to build a house, and the others were to build barns to be inspected by the class. The barn was to be used as a standard, and the house was to be in proportion to the barn.

While these girls were experimenting with the building the remainder of the class began work on the farm vehicles. It was decided that those vehicles necessary to preparation for winter would be a lumber wagon for hauling timber from the woods, a grain wagon for taking grain to market, a truck for general hauling, a hayrack to bring hay from the stacks for feeding, a spring wagon for lighter hauling, and an automobile for the use of the family.

Each girl chose the vehicle she preferred to make, and



THE FARM PROJECT

the results were presented at the next recitation period. Since there were several of each kind, the class made the selection of the ones to be placed on the farm, judging them from the standpoint of proportion, durability, neatness, and general effect.

The lumber wagon selected was made of heavy paper painted, with covers of baking-powder cans for wheels; the hayrack, of cardboard enameled black, with wheels cut from corrugated paper; the grain wagon, of cardboard painted; the spring wagon, of a small cardboard box, with wheels of heavy cardboard, a knitting-needle for axle, real springs of thin strips of tin, and a tongue fastened on a pin pivot so that it really turned; the truck, of a cigar box for the body, a cardboard box for the cover to the driver's seat, and wheels of typewriter-ribbon spools covered with a strip of rubber for tires.

The blocks used for the construction of the buildings were the same type of floor blocks as those furnished all kindergartens in the city. Since this was the first work which had been done with the blocks, the initial result showed a rather poor technique. The class inspected the buildings and suggested that walls could be strengthened by laying blocks double (as they expressed it, "two up and two down") and by overlapping blocks to prevent a continuous crack. They also suggested that corners could be made more durable by interlacing blocks, thus preventing the walls from toppling, and that a better effect would be given by having windows and doors outlined. The same groups rebuilt their buildings and again presented them. This time the class selected the ones they liked best, considering the points in technique mentioned above.

After experimentation it was found that only flat roofs could be made very easily with blocks, since the weight of the blocks was apt to cause a slipping. Cardboard was substituted and proved satisfactory, since it was pliable, easy to handle, and took paint readily, greatly adding to the general appearance of the buildings.

It now became necessary to plan the arrangement of the farm so that the buildings selected might be rebuilt. Each girl made a rough drawing showing her idea, and explained to the class why she considered her plan satisfactory. It was finally decided that house and barn should face south, affording protection from the north wind; that the barn should be reasonably close to the house, thereby saving many steps; that the chicken house should be directly behind and near to the house, since the housewife usually fed the chickens; that the granary should be near the barn to make feeding easier; and that the tool shed should also be close by to save steps when tools were needed at the barn. The pigpen was located as far away as possible for sanitary reasons, but near the granary to make feeding easy. The orchard and pasture were placed facing the road, affording balance and adding to the general appearance.

After the sites for house and barn had been designated, the group whose building had been selected started to rebuild. Different groups were appointed for building the other buildings, which were judged and selected in the same way as the house and barn, the ones chosen being placed in the position indicated in the plan, which had been drawn on the blackboard.

Meanwhile the girls not assigned to building-groups had been making animals—horses, mules, cows, a calf, pigs, chickens, ducks, a dog, and sheep. These were made of cardboard and painted. Sheep had not been mentioned, but one girl decided that they were needed and brought them in ready-made without discussing the matter with the class. This necessitated the building of a sheep shed, which was placed in the corner of the pasture.

By this time the buildings were in place, the animals were ready, and a need arose for fences. Various possibilities were discussed, and results of experimentation were brought in for the class to inspect. Different kinds were selected, as no one kind seemed to be suitable for all purposes. Those for the chicken yard and pigpen were made of paper, the former representing mesh wire and fastened to clay posts, the latter cut to show rails and pasted to blocks standing upright. The fence for the orchard and pasture was made of twelve-inch enlarged sticks set lengthwise in clay posts. The fence for the front caused much argument. Three girls had conceived the idea of one made with stones set in clay, and nothing could convince them that the result would not be satisfactory. They were allowed to build the fence and demonstrated to the satisfaction of everyone that it would not be practical for children to make, since the setting of stones one by one was very tedious, and the clay in drying shrunk away from the stones in such a way that the slightest jar caused them to fall.

Early in the project one girl who heretofore had shown little initiative in the work with materials asked permission to make the windmill. The result was an excellent piece of technique, the frame being made of cardboard, the wheel of fan-shaped pieces of cardboard so strung on wire that it would actually turn, and the pump of heavy paper with a handle which could be disconnected. A tank was added with a folding lid, and a heater in the center.

The farm was now finished except for the accessories which would help convey the idea of preparation for winter. Each girl was asked to tell what she considered necessary to make the result complete, and the suggestions were listed as follows: a duck pond made of a mirror set in clay; a long feeder for the chickens, with real grain in it; two pitchforks, a wheelbarrow, four pails, a cup to hang on the windmill, a cistern for the back yard; a self-feeder for the pigpen; hay for the haymow and rack; a cat for the back porch; a silo made of ice-cream containers painted; bare branches set in clay for trees in the orchard, and cedar branches for the front yard; apples, potatoes, carrots, and pumpkins made of clay painted; barrels and baskets made of paper and varnished for holding fruits and vegetables; a ladder for apple-picking; gravel walks and drives made by sprinkling gravel on freshly varnished cardboard; a farmer, a hired man, a housewife, and three children cut from magazines and mounted on cardboard with standards at the back; and an aërial on the house so the farmer could receive market reports and the family be entertained on long winter evenings. Each one in the class chose from this list the things she wished to make, and the farm was completed.

When all was finished the class, feeling justly pleased with their work, decided to invite their parents and friends on a certain afternoon for an inspection. Someone suggested that this might be made a Thanksgiving party, so the day was set for the Wednesday afternoon preceding Thanksgiving. In order that everything should be in keeping, it was decided that farm products should be used wherever possible in providing for party needs. Invitations were written with India ink on smooth corn husks or on a roll of paper held under the wing of a turkey, which was made of painted cardboard. The room was decorated with large shocks of corn in each corner, miniature shocks on the serving-tables, and realistic clay pumpkins grouped about. Dolls made of corncobs dressed in corn husks stood at each end of the tables. One wore a hat cut from a beet; the other, one cut from a turnip. The room was lighted with candles set in candlesticks carved from potatoes, carrots, beets, and turnips. Apples and pop-corn balls were served from baskets made by hollowing out large pumpkins.

In checking over the actual results derived from the project, which had covered four weeks, the girls decided that the following were outstanding:

1. Practice in the use of blocks and a higher standard of building-technique.
2. Familiarity with the use of a variety of materials provided for the kindergarten and primary children in the city, such as blocks, papers of various sorts, clay, and different kinds of paints.
3. Resourcefulness in the use of materials available to children but not generally recognized as usable: cigar boxes, lids of cans, ice-cream containers, etc.
4. Ability to reproduce in tangible form things familiar in everyday life.
5. Ability to work harmoniously in groups, arranging the time for work to suit the convenience of the majority

and giving up cheerfully individual preferences for the common good. (See "Democracy," on page 27.)

6. Appreciation of the difficulties encountered in the use of materials, and the formation of a tentative standard by which to judge those suited to various degrees of child development.

7. Practice in actually initiating, organizing, and executing a project, and an insight into the method of handling the same type of work with children, using both individual and group work.

CHAPTER XI

A STENOGRAPHIC REPORT OF A COLLEGE HISTORY LESSON

The following stenographic report was taken from a history lesson and is typical of the method of procedure in most of the regular classroom recitations throughout the country, especially in the upper grades, high schools, and colleges.

TEACHER. How do you account for the feeling among the members of the Constitutional Convention?

PUPIL. The members were aristocrats.

TEACHER. How did it happen that they were all aristocrats?

PUPIL. They were big men at that time, and the legislature elected them.

TEACHER. What is the reason? There must be a reason back of it all.

PUPIL. I don't know.

TEACHER. Mary, what is the reason?

MARY. The men who were elected believed in autocracy. They just got through with the Revolutionary War.

TEACHER. Well, you touched on the point, but you haven't hit it yet. Such men as Samuel Adams and Thomas Jefferson were not elected. Why?

PUPIL. Because they did not want to be elected. They believed in states' rights and states' government rather than national government.

TEACHER. Why were the members elected?

PUPIL. Well, they were all property men and aristocrats and did not have much to do.

TEACHER. They were all busy men. Some were governors, some lawyers and judges, but they were all busy. They all had big things to do. Why were the members elected, Ruth?

RUTH. They were more influential, and the states elected them.

TEACHER. No; the people did it. Why did they elect these men?

PUPIL. The Revolution brought the people to the front. The war was really won by the people. Conditions were such that all the people were of English birth or English education, but the leaders of the Revolutionary Army rubbed shoulders with the common soldiers too long.

TEACHER. Constantly I have been calling your attention to the fact that state government had been ahead of affairs. What condition was the country on the verge of?

PUPIL. Anarchy.

TEACHER. Cite some examples of anarchy.

1 PUPIL. Shays's Rebellion.

2 PUPIL. Trevett-Weeden Case.

3 PUPIL. Virginia and Maryland over the tariff.

4 PUPIL. New York and New Jersey over the tariff.

5 PUPIL. Massachusetts and Connecticut over the tariff.

TEACHER. Account for the crest of this aristocratic age.

PUPIL. All the disturbances among the states caused alarm, but when Massachusetts allowed such a thing as Shays's Rebellion, it seemed as if things were going to turn.

TEACHER. What were the qualifications of the members of the cabinet?

PUPIL. Most of them were men who had held some office.

TEACHER. Yes. What is another?

PUPIL. Age was one.

TEACHER. What about the age?

Pupil. They were young men. From twenty-one to thirty-one, I think.

Teacher. Yes; they were all young men. What is another?

Pupil. They were all English or of English birth.

Teacher. Now, just what do you mean by English?

Pupil. Well, they were brought up English.

Teacher. Then, we shall say they were of English descent or English education. There is one more qualification you have not mentioned. It is usually mentioned first.

Pupil. They were all highly educated. Is that a qualification?

Teacher. Yes; that is very important. Most of these men were college men. It might be interesting to you to know that 29 out of a possible 73 were through college. This number varies according to different texts from 29 to 76. Why did they not establish a limited monarchy?

Pupil. I don't know quite what you mean.

Teacher. Did they talk a limited monarchy? Did they dare do so? Would they like to have done so?

Pupil. Hamilton praised a limited monarchy.

Teacher. Did they realize that a limited monarchy was impossible?

Pupil. I don't think it was what they wanted; anyway, the colonies had been fighting against this very thing. They could not establish a limited monarchy.

Teacher. What was Hamilton's plan for the machinery of government?

Pupil. His plan of government was for the people, but not by or of the people.

Teacher. What did his plan provide for?

Pupil. For a new Constitution.

Teacher. Of course they would have to have a new Constitution, but what was his plan of government? Can you help her out, Martha?

MARTHA. They were to have two Houses, a Lower House and an Upper House. The Lower House was to be of the people. They were to have an executive elected by the states, and the executive and Senate were to hold office for life.

TEACHER. Let us compare Hamilton and Jefferson. What was Hamilton's early training? Where was he educated?

PUPIL. Hamilton was of low origin. He was born in the West Indies.

TEACHER. All right; Hamilton was of low origin. What about Jefferson?

PUPIL. He was of high origin. He came from a high family.

TEACHER. Now, what is the comparison?

PUPIL. Hamilton was of low origin and went up, while Jefferson was of high origin and went down.

TEACHER. Why were the leaders of the Revolution not present at the convention? Mildred, name one, and tell why he was not there.

MILDRED. Jefferson was not there because he was in France.

1 PUPIL. Lee wasn't there because he did not want to go.

2 PUPIL. Patrick Henry was not there because he wasn't in sympathy with them and did not want to go.

3 PUPIL. John Jay did not want to go.

TEACHER. Are you sure about John Jay? Did he know just what he wanted to do?

PUPIL. No; he was undecided.

TEACHER. Did John Jay do all he could to put the Constitution over?

PUPIL. Yes.

TEACHER. What other social democrat was not present at the convention?

PUPIL. George Washington.

TEACHER. What is she thinking of?

PUPIL. She is thinking of the First Convention.

TEACHER. Was George Washington there, class?

CLASS. Yes.

TEACHER. What part did he play? Was he important?

PUPIL. He helped put many important things over.

TEACHER. What office did he hold?

PUPIL. He was chairman.

TEACHER. What great social leader was not there?

PUPIL. Monroe was not there.

TEACHER. What other one? A very important one.

PUPIL. Samuel Adams.

TEACHER. That's right. Why was he not there?

PUPIL. He was busy in Massachusetts at the time. Anyway, he was against it.

TEACHER. But what did he do later?

PUPIL. The conversion of Adams made possible the acceptance of the Constitution.

TEACHER. Yes; he put it over in New England, didn't he? What other difficulties arose in the convention?

PUPIL. The Virginia plan and the New Jersey plan.

TEACHER. Well, what was this plan? That doesn't mean anything to us.

PUPIL. The difference of opinion. I don't know just exactly what they were.

TEACHER. What was the New Jersey plan? What was the Virginia plan? Can you help her out, Ruth?

RUTH. Virginia wanted a new Constitution and New Jersey favored a revision of the articles.

TEACHER. What is another difference?

PUPIL. Virginia wanted a representation of people, not states. New Jersey wanted a representation of states.

TEACHER. What was decided on?

PUPIL. A representation of a group of states, the small and large states.

TEACHER. What were the large states at this time?

Pupil. Virginia, Massachusetts.

Teacher. All right; name them while I write them on the board. (*Teacher writes on board*)

Large	Small
Virginia	New Jersey
Massachusetts	Delaware
North Carolina	Maryland
South Carolina	New York
Pennsylvania	Connecticut

Pupil. I thought New York was one of the large states.

Teacher. No; it was one of the small ones at that time. How is it ranked today?

Pupil. New York is the largest state in the Union now.

Teacher. Which was the largest state at that time?

Pupil. Virginia was the largest.

Teacher. Which was the next?

Pupil. Pennsylvania was next.

Teacher. Has Virginia as much territory now as it had then?

Pupil. No.

Teacher. What part did it have then that it hasn't now?

Pupil. West Virginia.

Teacher. How was this controversy settled?

Pupil. The Upper House was to represent the state, and the Lower House the people. Representation was arranged according to wealth. At this time the Upper House was made up of wealthy men.

Teacher. Is the Senate still made up of wealthy men?

Pupil. Yes.

Teacher. Yes; it is. It is often called the Millionaires' Club. It is interesting to know that some of the senators whose salary is $7500 spend $15,000. I wonder why.

Pupil. I don't know.

Teacher. It is necessary that they have clerk hire. Some of them have large offices of twenty or more clerks. How do they go about aiding the legislature?

Pupil. They have clubs of men that go before the legislature.

Teacher. What do they call those organizations of men that go before the legislature to see about putting over certain bills?

Pupil. Lobby.

Teacher. Are these lobbies paid agents?

Pupil. Sometimes.

Teacher. Suppose I should go to our senator and ask him to pass a certain bill, would I be a lobbyist?

Pupil. Yes.

Teacher. Suppose the senator should send for me, as he did in one instance, for expert information, would I then be a lobbyist?

Pupil. No.

Teacher. No; I would not. A lobbyist is one who is sent to the legislature for the purpose of putting something over. How are the representatives chosen?

Pupil. At the First Congress the representatives were chosen 1 representative to each 3200.

Teacher. Does this rate still hold true?

Pupil. No. One unit of representation is now 210,000 for each representative. She said it was 3200. It was really 3000.

Teacher. Yes; it was 3000. What was secured by this system of representation?

Pupil. The representatives of the Lower House and Upper House were chosen. It fixed the form of our Federal government. Partly Federal and partly states.

Teacher. What was the second great controversy question?

Pupil. The second controversy was whether wealth or population was to be considered.

Teacher. Yes. It was a case of whether they should count the wealth directly or the population. The only way is the population. What was the next controversy?

PUPIL. Over who should make up the population. The difficulty was between the North and the South over slavery.

TEACHER. I wouldn't say over slavery, because the question of slavery did not come up directly. Was the Mason and Dixon line settled at this time?

PUPIL. No.

TEACHER. How was this difficulty finally settled, Maud?

MAUD. By three-fifths population.

TEACHER. What do you mean by three-fifths population? Did five negroes have three votes? If you were a white man at that time, where would you rather live and be in politics? I mean, where would your vote count for most?

MAUD. It would be the same.

TEACHER. Would it? If in any given southern state there were 5,000,000 black folks, how many counts would they be given in that state?

PUPIL. Three million.

TEACHER. Suppose in the same state there were 3,000,000 white people. How much would the vote of one of these white men be worth?

PUPIL. The count in that state would be 5,000,000 people.

TEACHER. Who did all the voting?

PUPIL. The white men.

TEACHER. Then how much would the vote of each man be worth?

PUPIL. Each man would have two and one-half votes.

TEACHER. Therefore each man's vote in the South would be worth two and one-half times as much as in the North. What was this vote for?

PUPIL. For the representation.

TEACHER. The North didn't think that a three-fifths ratio was quite fair. Why?

PUPIL. Because the representation was for the direct tax.

TEACHER. Direct taxes were assessed in the United States just five times, so it didn't make much difference. Your fathers have not had to pay any direct taxes until lately. How does the government raise money?

Pupil. By indirect taxes.

Teacher. What are indirect taxes?

Pupil. Taxes levied on imports and exports.

Visitor. I wonder if you girls know how many times the word *slavery* appears in the Constitution.

(*They do not know*)

Teacher. It does not appear once. I'll tell you why. The country was and has always been ashamed of the word *slavery*.

It will be noted that in the course of the hour the teacher responded seventy-six times, while the sum total of responses from the members of the class was only eighty-one; also that the number of words spoken by the teacher during the recitation was 1055, while the total number of words spoken by the members of the class was 764. This would indicate that the teacher consumed about 58 per cent of the entire recitation with questions, while the remaining 42 per cent of the time was taken up by the students in answering. On the whole, the teacher's questions were thought-provoking in type. However, the answers given by the pupils do not reveal any considerable amount of purposeful thinking on their part.

Let us try to judge this lesson in the light of the standards and principles set up in Part One. In the first place, it is evident that the teacher's aim was for knowledge only. The students were being questioned and cross-questioned on what had been assigned for study the day before. Sheer memory was about the only mental activity involved. (This is the type of history assignment that is referred to on page 33.) It is clear that the teacher assumed the entire responsibility for directing the course of events during the hour. Opportunities for planning, judging, organizing, and executing were reduced to a minimum. The drive was entirely within the teacher (see "Drive, or Inner Urge," on page 9). The Law of Readiness was at a very low ebb (see "Laws of Learning," on page 16). There was little, if any, of the principles of democracy in evidence (see "Democracy," on page 27). Memory was a substitute for reflective thinking (see "Memory," on page 26).

Contrast the possibilities of this method of procedure with that of the project method as set forth in Part Two, Chapters III–VIII.

CHAPTER XII

A STENOGRAPHIC REPORT OF A SIXTH-GRADE HISTORY LESSON

The project method had been used in most of the geography work throughout the year in the sixth grade. Problems were constantly being raised which involved history, and the pupils became very much interested in the early explorers of America in connection with the study of European countries. The following stenographic report of a class discussion on the early explorers is given below as a contrast in method of procedure to the lesson illustrated in the preceding chapter.

This class was divided into five groups. At the beginning of the lesson the leaders of the groups were given just a few minutes to confer as to what explorers each group should tell about. Then each group met to plan what it could best present and how it could best present it. Each group selected one of its members to lead the discussion. Of course the history content had been learned in connection with project work such as is illustrated in Chapters III–IV, VI, of this volume. This lesson was in no sense of the term a project. However, it was the outgrowth of project work, and the spirit of the project was present to a considerable degree. This is a typical socialized recitation illustrating the manner in which much of the school work is carried on through groups of children.

Early Explorers

A leader from one of the groups took charge and told the following:

Leader. In early times there were a great many explorers; that is how we became Americans. One was Prince Henry. He wanted to find a water route to India. He started from Portugal and went in this direction (*Indicating on the map*). He did not know the ocean as the Atlantic Ocean, but called it the Sea of Darkness. His men became afraid and refused to go on, and he had to turn back. He did not quite reach what we call now the Cape of Good Hope.

Then another great explorer was Diaz. He sailed in 1486. He started from Portugal and hoped to discover a water route to India. He went as far as the Cape of Good Hope. Then his men refused to go forward, so they turned back.

The greatest explorer of all was Columbus. On August 3, 1492, he sailed to find a shorter route to India. He started from Spain. As Portugal had many explorers, so Spain was to have some. At first many thought Columbus foolish to venture into the Sea of Darkness when all the other great explorers had turned back. He went out with one hundred and twenty men. They were afraid of the Sea of Darkness. They soon became frightened and prayed him to go back, but he would not. At last they came to land, and claimed it in the name of King Ferdinand and the queen. He left twenty men there and turned back. The next time many men went with him. After the others ventured into the Sea of Darkness, they were willing to go. So he took a great many men and went to the place where he had left the twenty men, but not a man was left. They had either starved from hunger or had been torn to pieces by wild beasts.

Teacher. You are going a little too much into detail. We are just reviewing. What did Columbus accomplish?

Leader. In 1502 he made his last exploration. He got shipwrecked. His men deserted him and brought him back in chains and broken down in health. He returned just before Queen Isabella died.

(*At this point the* Leader *paused for a class discussion. Some twenty-five pupils arose, each remaining standing until recognized by the* Leader. *Each had some question to ask, correction to make, or something additional to contribute*)

MARY. Columbus did not prove the world was round, but discovered a new land.

GEORGE. Who did you say discovered the Cape of Good Hope?

LEADER. Diaz discovered it.

RUTH. Who named the Cape of Good Hope?

MAUD. King Ferdinand.

DICK. No, it was Vasco da Gama. The people of Portugal were so glad, that they called it the Cape of Good Hope.

HELEN. What was the queen's name?

LEADER. Queen Isabella.

HELEN. She was queen of what country?

LEADER. Of Spain.

LUCILLE. Why did all the explorers want to go to India?

DOROTHY. They wanted to go to get spices.

TED. What were the names of the ships Columbus used and the name of the leader?

LEADER. There were three ships. The one Columbus was in was named *Santa Maria*.

NELLIE. What does it mean when it says in the book that Diaz brought good hope for Portugal?

MARJORY. It means they had hopes that Diaz had discovered a way to India.

ALICE. For whom did Diaz sail?

LEADER. He sailed for Portugal.

WARNER. Alice, it would be better to say, "For what country did Diaz sail?"

ALICE. Thank you, Warner.

LUCILLE. Why did they all try to find a water route to India?

BLANCHE. They wanted to find a cheaper and quicker way than by caravan. It was dangerous to go by caravan.

PAUL. Why was it dangerous?

MAUD. Because people robbed them, and sometimes they could not find water while crossing the desert.

JOHN. The people in Europe were Christian, and the people in Arabia were Mohammedan and got control of North Africa and cut off the route by land, so the Christians tried to go another way to avoid the Turks.

MARY. How did trade first start with the Far Eastern countries?

LEADER. The Turks had conquered the Holy Land, and the crusaders were going to help capture the Holy Land from the Turks. While they were there they met other people and began trading with them.

JOAN. Who were the crusaders?

NED. Those who went to conquer the Holy Land.

JOAN. Where were they from?

NED. They were from Italy.

RUTH. They were from France, British Isles, Germany, and Italy.

FRANCES. What did the crusades do for Genoa and Antwerp?

ELEANOR. They made large cities out of them.

WARNER. They increased the trade with Africa and decreased it with other countries because it could not go through the Strait of Bosporus, so it had to go another route.

HENRY. They increased the trade with Genoa, but after the water route was discovered the trade came to Lisbon and Antwerp.

FRED. The greatness of Columbus is shown in his self-reliance, his fine spirit, and his power of commandery. His mind was set on the fact that the world was round, and he would not give up.

Faye. I don't think Prince Henry sailed at all, but sent other men.

Glenn. Prince Henry set in motion the plans to sail.

Teacher. He provided them with means to make the explorations. He was the promoter.

James. I don't agree with Joe when he said that Columbus left twenty men as explorers; he left twenty men as a Spanish colony.

Jack. Was Columbus the only man who thought the world was round?

(*Several answers in confusion*)

Margaret. Americus Vespucius thought the world was round.

Roy. The monks and other people thought the world was round.

Robert. Other wise men knew it.

Ned. How did the natives happen to be called Indians?

Leader. Columbus found people on the land and thought he had found India, so he called them Indians.

Mary. If this new route to India is longer, why would it be cheaper?

Bernice. If they started from Portugal and wanted to go on around to India, unless they could find an all-water route they would have to change to caravans, and there was danger of robbers at that time.

Ray. Was it best for the world when the Turks captured Constantinople?

Leader. After the Turks captured Constantinople, all had to pay a tax to go through.

Faye. It was a good thing, because they then began to look for another route. This finally led to the discovery of America.

Harry. Why didn't these explorers go up to Canada and Iceland?

Teacher. The Scandinavians had explored up there.

Bertha. But it had been forgotten.

Ted. What was it they wanted in India?

LEADER. They wanted spices.

TED. Was that all?

LEADER. They wanted the gold and precious stones.

MARY. They wanted the luxuries.

TED. The first thing they wanted was luxuries.

(*This discussion ended here, and the* Leader of Second Group *took charge*)

LEADER OF SECOND GROUP (GEORGE). In 1502 Americus Vespucius sailed. He was a native of Italy, but sailed for Spain. He came from Spain down to a little island, Falkland Islands, then down the western part of Africa and back up again. Another man, even at the time Columbus was making his first voyage, was planning to sail westward, a man named John Cabot, a merchant of England. He had seen caravans from the East, and wanted to find an all-water route around to India and find the luxuries of that country. He sailed from England and landed about where Ohio is now, and then sailed back. Then his son took charge and sailed up to Greenland and up to where John Cabot had been. Another man by the name of Vasco da Gama sailed in 1492. He found a water route by going around the southeast part of Africa.

(*Here, again, the* Leader *paused for the following discussion*)

HELEN. What kind of ships did John Cabot use?

LEADER. They used sailboats then.

HELEN. Did they have wings or something to go over Niagara Falls to get to Ohio?

HAROLD. George meant to say "Maine" or "Labrador."

GLADYS. George, you could improve your recitation by not using so many *and's*.

GERTRUDE. What nationality was John Cabot?

LEADER. English.

GERTRUDE. What country did he sail for?

LEADER. He sailed for England.

VERNE. Beg pardon, Gertrude, but it would be better to say, "From what country did he sail?" Do not end the sentence with a preposition.

EMMA. For whom did Vasco da Gama sail?

GLADYS. He sailed for Portugal.

SARAH. What was the importance of Da Gama's voyage?

NELLIE. He found an all-water route to India.

RUTH. Why was that of importance to Portugal?

NELLIE. They could now carry on trade with India.

ALBERT. John Cabot sailed for England. Was he a merchant of England?

LEADER. No; he was a merchant of Venice in Italy.

ALBERT. How did John Cabot happen to sail for England?

LEADER. He went to England and lived there for a while, and they sent him on this voyage.

ARTHUR. Why did he not stay in Venice, where he lived as a merchant?

LEADER. He wanted to explore more.

ARTHUR. No; he was chased out of Venice.

MARY. Arthur, you are thinking of Marco Polo.

TEACHER. What about the importance of Americus Vespucius?

KENNETH. He was the first white man to reach the mainland of North America.

HARVEY. No; he was the first one to reach South America.

JOAN. Why did they name the country after him?

ELEANOR. He made maps to show that the earth was round.

TEACHER. He made maps and wrote about this new country.

KENNETH. Harvey, you are mistaken. Americus Vespucius was the first man to reach North America.

HARVEY. Beg your pardon, Kenneth, but Americus Vespucius never reached North America.

(*After some contradictions the* Teacher *asked the two boys to look this question up in their books. The* Leader of Third Group *now took charge*)

LEADER OF THIRD GROUP. A man by the name of Balboa was hunting gold on the Isthmus of Panama and the neighboring islands, when some Indians told him about a great expanse of sea beyond the mountains. So he sailed September 20, 1513, to the Isthmus of Panama and climbed the mountains and saw the Pacific Ocean. He took the land in the name of Spain.

Magellan was one of the men who had sailed around Africa to India, but believed that if he sailed west he would find some strait that would make a shorter route. Four months after he started he landed at La Plata River and, not finding a strait, sailed around South America, and from there across to the East Indies, where he was killed.

TEACHER. Magellan was killed. Was the voyage finished?

LEADER. His men took the expedition on. Cartier was another explorer who sailed from France in 1534. He landed at Labrador and then returned to France. A year later he made another voyage and sailed up the St. Lawrence River and took that land in the name of France.

(*Here, again, the* Leader *paused for the following discussion*)

JOAN. What was the importance of Cartier's voyage?

MAUD. He discovered the St. Lawrence River and started two colonies in Canada, one of which is now Montreal.

RUTH. What did they call the Pacific Ocean?

LEADER. The South Sea.

GILBERT. What was the importance of Balboa's discovery?

LEADER. After he discovered the South Sea he established a colony for Spain, and then later other Spanish explorers came to the United States and settled in what is now California. Then missionaries came there.

ARTHUR. Before this time people thought that there were but three continents, Asia, Europe, and Africa. But after Balboa's discovery they believed that they had found a fourth continent. This led to Magellan's sailing around the world.

FRANCES. He sailed around the world and proved that the earth is round. After this the people began to settle America as a new country, for they now knew that it was not India, as some at first had thought.

MARJORY. Did Balboa find the strait he was looking for?

LEADER. He was not looking for a strait. But, Marjory, did you notice that you made the same mistake that Gertrude made a while ago? You should have said "for which he was looking."

TEACHER. For what were most Spaniards looking at that time?

HARRY. They were looking for gold.

(*Going back to the question in dispute*)

HARVEY. My history says Americus Vespucius landed in South America.

(KENNETH *accepted the correction and thanked* HARVEY *for his trouble*)

While there was no dominating purpose in the way of a project in the minds of the children in this history lesson, yet this is a type of lesson sought after by many progressive teachers. It is a decided improvement over the type of question-and-answer method used in Chapter X. Of course this lesson was also of the question-and-answer method, but the pupils asked the questions on their own initiative. A careful study of the questions asked will reveal the fact that there was a purpose pertinent to the occasion behind almost every question and comment.

There was judging, planning, and organizing at the beginning of the lesson when the leaders of the groups got together and decided which of the explorers should be assigned to the various groups. Then, again, they met in their respective groups to talk over the explorers whom they were to discuss and to plan how best to present their explorations to the class as a whole. Each group selected one of its members as its representative. This leader then proceeded to gather all the information he could from the other members of his group.

The first group was to tell about Diaz of Portugal and Columbus of Spain. In their short conference the leader proceeded to get all the help possible from the individuals of his group. While this was going on, some of the members might be seen reading from a history to the entire group. Again, one pupil might be off by himself reading for the purpose of finding suitable information to hand over to his leader. Some would be busily engaged in telling the leader something about some particular event connected with Diaz or Columbus. Finally, after all the information available had been "pooled," plans were made as to what should be told first and what should follow this, etc. All this was done within a space of ten minutes. This called for quick, active, concentrated effort on the part of everyone. It required helpful coöperation, group planning, mutual interest in common objectives, initiative, and personal effort. Leadership was being developed; likewise the following and supporting of properly constituted leadership. In fact, the fundamental principles of democracy were in evidence (see "Democracy," on page 27).

In a similar manner, and at the same time, the other four groups were preparing for their discussions.

In contrasting this lesson with that of the previous chapter we cannot help but notice how the drive in the first instance is in the teacher, while in the second it is almost entirely in the pupils. The law of readiness on the one hand was almost totally absent, while on the other hand it was a prominent factor (see "Laws of Learning," on page 16).

There was no trace of a socialized situation in the first instance, while the second lesson was highly socialized. The one disregarded the laws of learning and the principles of democracy, while the other provided well for the operation of these factors of learning.

The one method is traditional in its origin, and the other shows a decided tendency toward the more modern conception of method.

CHAPTER XIII

A TYPICAL YEAR IN A FREELY ORGANIZED PRIMARY ROOM

Much has been said concerning the vast sums of money spent by prosperous American cities upon their public schools. And although many modern school buildings have been constructed at enormous expense, it is appalling to notice how few of them, at least until recently, have been planned to be real homes of the activities of little children. There are vast expanses of landscape-gardened and neat gold-lettered "Keep off the Grass" signs. There are rustic vine-covered walls to look at and none to climb upon. There are imposing structures with spacious halls, broad stairways, and microscopic classrooms. There are wonderful libraries for the older pupils, and not a cupboard for the little children to call their own.

Many teachers with a firm faith in childhood and a desire to provide for its natural growth are confronted with the task of transforming inconvenient schoolrooms into suitable homes for the work and play of little children. Young people trained in modern educational theory in our most progressive normal schools and universities find themselves at the opening of school in September in schoolrooms far from ideal in any respect. They must, then, either change conditions as far as is consistent with common sense or else forsake their point of view entirely.

A year's experience in meeting such a situation may serve as an illustration. This school was located in the residence district of a Middle Western city of three hundred thousand inhabitants. The parents were average middle-class people interested in their children's school life and willing to help all they could.

Realizing the effect the schoolroom would have upon the children, the teacher undertook a few changes even before school began. She knew that in her enthusiasm for a children's workshop she might give too little attention to color harmony and artistic effects, so she planned to make the room artistic as well as convenient.

The teacher's first efforts were to correct the effect of extreme height which the room gave and to bring things down to the level of little children. The strip of burlap above the boards was there to stay, so it seemed best to use it in some way. She bought several strips of nursery wall-paper borders (large, clear-cut figures of children, Mother Goose characters, animals, etc.), cut them out, and applied them as a frieze. As the paper was inexpensive she was able to change the borders often and to use the figures best suited in color and kind to the season and general activities in the room.

At first she was undecided about sash curtains. The room needed homelike touches, but she was afraid the curtains would shut out some much-needed light. But she finally bought very thin white material for curtains and gained the effect she desired with minimum loss of light.

The cloakroom was by far the cheeriest spot available, and the end of it which contained the windows was easily converted into a homelike "sitting-room," as the children at once named it. After the coat hooks were removed, the wainscoting served as a background for pictures which the children could see and enjoy. Every few weeks the pictures were changed, the children choosing the ones they liked best.

There were no toys or children's furniture; but a friend had donated a rug, the janitor had resurrected some dilapidated kindergarten tables which were covered with nursery cretonne, and some curtains, picture books, and a wee rocking-chair were added. When the children came into the cloakroom the first morning of school they looked longingly at the "sitting-room," and as soon as they found that they might freely explore its wonders, they descended upon it in a body. A group meeting was necessary at once, and plans for "taking turns" were set up. As many other activities soon arose in the main room, the demand for the sitting-room became more normal, although it remained a great attraction throughout the year, becoming in turn "ladies' rest room," "library," and "waiting-room."

After a discussion in which the children told of things they had at home which could be used, they decided to send a note home to mother explaining their needs. With the children's help the teacher made a list of supplies and wrote a carefully worded note, which read somewhat as follows:

Dear Patron:

We are trying to make our room a pleasant place in which to work and play. (Mary) will tell you about our plans. If you want to furnish any of the items on this list or lend any of them to us for the length of time (Mary) is in this room, we shall be very glad to receive them.

SUGGESTED NEEDS

Sewing-Materials: scraps of cloth (preferably half a yard or more), pieces of yarn, ribbon, and buttons.

Children's rockers and small straight chairs.

Toys: dolls, doll's furniture, dishes, bed, washing-set, broom (no mechanical toys).

Miscellaneous: empty kodak films, spools, nails, wire, milk-bottle tops.

Soon the sitting-room was completely furnished, and several rockers, tables, and chairs were added to the main room also. The manual-training boys built some crude shelves low enough for the children to reach, and the head of the manual-training department devised for them a worktable with a vise on each corner, drawers for tools on two sides, and wide shelves on the other two sides. As the workbench had to be in the main room, where the more quiet activities took place, it could be used only for woodwork at certain periods, but at other times it served as a reading-table round which the children could gather at any time.

Most of the material in the cupboard was of the older type, but the children found use for much of it in ways not intended by the people who devised it as "busy work." For instance, the colored sticks made satisfactory mixed candies in the play store, the gift boxes served many purposes from wagon beds to flower boxes, and the pointers were sawed up and used for drumsticks.

As the Hill blocks were not furnished, the children had to use some other medium for inclosing spaces etc. With large rolls of heavy brown paper, a few strips of wood borrowed from the kindergarten, a couple of empty store boxes, and some old drawing-easels they were able to build what they needed. Later a load of blocks, boards, and slats of various sizes was furnished by one of the patrons of the school. At first the children brought tools from home—an odd assortment, it is true, but useful until better ones were bought for the school.

From these small beginnings in the way of equipment and materials the year's work began.

DEVELOPMENT OF A PROGRAM OF WORK

Young teachers often ask how they shall "start" the children; but the longer they work with children the more they realize that much less "starting" is necessary than they had supposed. The teacher's problem is to see possibilities, to encourage worthy beginnings, to supply that information and experience the child may be unable to get for himself, and to see that the whole trend is upward. So after all materials had been provided for a suitable school home, the teacher's task was one of stimulating and guiding valuable activities.

For the first few months much of the children's work was individual. Often experimentation with materials suggested problems, and the children worked alone or in friendly groups in which each did his own work. Although the program was very flexible, some organization developed. Certain parts of the day were found to be best for certain activities. The children entered the building any time after 8.30 and chose their work. At 9.15 a group discussion was found advantageous to dispose of the routine of all school activities, such as attendance, announcements, etc., and to discuss general plans for the day's work. A library period lasted from 9.15 to 9.45, when the children worked in groups or individually, though group work was encouraged most at this time. As the workbench and blocks were in the main room, their use had to be restricted to certain periods of the day when the noise would not disturb those who wished to participate in the more quiet activities. A period of outdoor play was followed by music in the kindergarten room, which was just across the hall. Some form of language development occupied the time from 10.30 to 11. Often this was an outgrowth of a large group project (plans for further work, coöperative blackboard records of parts of the undertaking, etc.), but sometimes it took the form of stories, dramatizations, etc. From 11 to 12 was the regular free-work period, when all types of activities were permitted. The afternoon program followed somewhat the same plan, except that there was generally some form of written-language development at a period when the teacher could oversee and guide it. There was an afternoon quiet time for reading, etc., a short period for rhythm, and a free-work period again. In the next three chapters accounts of large group undertakings will show how all the subject matter of the school began and grew. Whenever one child had a particularly clever idea he was encouraged to put it before the children, and nearly always others joined him in his undertaking.

An "At Home" day for mothers was the first plan in which the whole group was interested. A Thanksgiving party for the kindergarten children was followed by more elaborate plans for Christmas. They began their preparations for Christmas the day after the Thanksgiving vacation by having a group discussion of plans for work. Of course all the suggestions the children made could not profitably be used, but it was decided to begin making gifts and later to decorate the tree and prepare for the party.

A group excursion to the down-town stores seemed impractical, so the children were requested to make individual trips and to notice especially the toys which they might make.

For several days the making of gifts was individual. The children experimented freely, and many results were discarded by the group, while others were accepted as good suggestions.

Some of the girls began at once to make dolls and dress them. A group formed every morning as soon as the doors were open, and interest did not wane until the dolls were finished, although the sewing was slow work. Some dolls were made from stockings and stuffed with cotton, and some were made of bottles so that they would stand. There were black mammies, and fine ladies with yellow-yarn hair. One child painted hair on the doll's head, and another covered the head with a silk hood, until experimentation proved that hair was too difficult. The faces were painted or embroidered, and sometimes beads or buttons were used for eyes. Each child brought the material for doll and dresses from home and worked out her own idea. The sewing-group was a friendly one in which the children talked and sang as they worked, and stopped to "play house" with their first finished product. Of course the boys wanted a drum. One boy tried to cover a peck measure, but the children rejected his product because it did not make enough noise. After attempts with various materials the children agreed that a tin coffee can which one of the boys had brought from home combined good shape and possibilities for noise, so they adopted his idea. This boy had secured such a pleasing result by putting a strip of cardboard cord diagonally between rows of paper fasteners at the top and bottom that most of the children followed his plan with slight variations. Drumsticks were made from old pointers, and were quite successful in evoking a merry din. The boys were so proud of their drums and played them so incessantly at every opportunity that the teacher, in self-defense, supplied music on the piano and encouraged a band.

After the girls had finished their dolls they played with them, and brought them to a group meeting at which they were to decide what to make next. When they asked the teacher what they could make that dolls would like, she suggested parasols. A short time before, when the children had dramatized the story of "Little Black Sambo," one of the boys had made himself a green umbrella. Now the girls imitated Black Sambo's umbrella in miniature. Circles of cardboard were covered with flowered samples of comfort material given them by a wholesale dry-goods firm. More worn pointers were sacrificed for handles, and bows of tissue paper to match the flowers added a finishing touch. The making of the parasols proved to be such fun that each girl made an extra one to give to the other first-grade girls in the building. To the boys was left the duty of providing a gift for the boys of the other room. Plans were enthusiastically made, but all experiments failed the first day, as the problems were too complicated. Finally, it was decided to make clay marbles and marble-bags of cretonne samples. Everyone was surprised to find that the boys secured as good results in sewing as the girls and were equally persistent in their work.

A few children wanted to make a workbasket for mother. They talked about how to do it, and as the time was short and they wanted a result which would last, it was finally decided to use a cardboard box as a foundation and to cover it with crêpe paper. Each child bought a roll of paper and divided it with someone who had a harmonizing color. There was great variety in decoration. There were paper flowers, bows, covers, fringes, fancy linings, and many different kinds of handles. Both boys and girls enjoyed this work, and their mothers said afterwards that the baskets were useful as well as beautiful.

Some toys were made, though only one of a kind in most cases. There were wagons, a doll's bed, a chair, a cradle, a doll's swing, a jack-in-the-box, a sled, and several sets of paper dolls.

When they decided to invite the mothers to their party, the children wanted to serve refreshments and have some kind of a "show." They learned a number of Christmas carols for the occasion and dramatized a delightful little story, "The Kitten's Christmas Wish." The boys wanted to play their drums, so a rhythm was worked out with the piano, and the boys accompanied with their drums.

Planning refreshments and table decorations was great fun. Following their color scheme of red and green the children made baskets for the pop corn, sewed stockings of mosquito bar for the candy, and decorated the tables with red tissue-paper blossoms. Each child decorated his paper napkin with some original design and made a napkin ring of red paper with his name on it.

Tea, wafers, and candy were served to the mothers from a large table, while the children ate at the small tables grouped round the Christmas tree. Tablecloths were brought from home, corn was popped by the children at school, and lemonade was made there also.

A tree was bought a week before the party, and the children decorated it entirely to suit themselves. On the day of the party the tree was resplendent in blossoms, tinsel balls, toys, and chains. Only the best results were accepted, but each child worked persistently until he secured a result good enough to be used.

The language possibilities of this project were many. Discussions, plans, and criticisms furnished excellent opportunity for spontaneous spoken language as well as practice in keeping to the subject. There had been very little written language up to this time, but the children now wanted to write letters to Santa. A long letter was impossible, but each child practiced faithfully the name of the toy he wanted most. All the children who did not already know how learned to write their first names in order to sign the letter. When the day for writing the letters came, there were a few children who could not write the name of the toy they had chosen, so the children decided it would be all right for these few to draw a picture of the toy and sign their names. A few of the older children wrote little letters of one sentence or more, using a large piece of wrapping-paper and black crayon. The children put cards on their gifts saying "From John," "To Mamma," etc., and although the card was often larger than the gift, the writing was the pride of the child's heart.

Many reading-lessons were based upon the Christmas preparations. An account of the plans and preparations was dictated by the group, written on the board by the teacher, and later printed and kept as a permanent record. They also had several blackboard lessons about the toys, trips to the toy store, etc.

After the party and the Christmas vacation the children suggested a store in which they might put the things they had left from Christmas and to which they might add others. All wanted a toy store, but when after a day or so the children tired of making new toys, one of them suggested a big store where different things could be sold. Thus the department store began, an account of which is given in the following chapter.

CHAPTER XIV

PROJECT: THE DEPARTMENT STORE

The possibilities of the department store were so numerous and some of the suggestions were so wild that the teacher was obliged to narrow the plans to one department at a time.

The children wanted to advertise the opening of the store in advance. They talked about the best way to make people curious, and finally agreed upon this sign:

STOP! LOOK! READ THIS!

BIG SALE

ALLEN SCHOOL STORE

PRIMARY ROOM

STORE WILL OPEN FOR BUSINESS
JANUARY 21, 1922

As no one child could learn to write the whole sign, parts of it were practiced on the board and on wrapping-paper by different children prior to the coöperative writing of the large poster for the hall. The pupils in the other rooms in the building were greatly interested in the store and watched the signboards each day for new advertisements as they passed through the hall.

The children wanted a millinery department first. Doll's hats seemed to be easiest to make, so after a discussion of ways to trim hats, materials needed, etc., they went to work with scraps of silk, samples, tissue paper, crêpe paper, and flowers. Some very original results were obtained and were imitated with slight variations by the less creative children.

The next question was how to display the hats to the best advantage. Hat standards were mentioned, and some of the boys offered to make them at free-work periods. At first they used spools with upright sticks through them, but after a trip to a millinery store they made more substantial wooden standards. A factory close by furnished strips of glass for counters, and the window ledges as well as the tables beneath were used for displays. A need arose for untrimmed hats and extra trimmings, and many feathers and flowers were made and put under glass show cases. In a few days the children suggested making hats for themselves. From crêpe paper, cardboard, and various other materials each girl made a hat. No two were alike, but all were carefully criticized by the group both as to construction and color combinations. A millinery store without mirrors was impossible, so mirrors were made from pieces of glass painted on the back. When the display was finished, suitable prices were decided upon, the writing of figures was practiced, and price tags made.

Advertising was the next problem. The children cut some suggestive advertisements from newspapers, but unfortunately the English of many of them was not good, so the teacher had to take the responsibility for selection. The children's adaptations were best after all. One such sign read:

STOP! LOOK AT THIS HAT!

BIG SALE

OF

NEW SPRING HATS

ONLY $1

The next step was to learn to write the words of the advertisements and signs. All the children worked on this, although there were several groups in the room. The ability of the children varied greatly. Sometimes all the children practiced writing one word of a sign, and the ones who wrote best were chosen to write the sign; but more often the children chose what they wanted to write, and each wrote a different sign or part of one. The teacher always had in mind some possibilities for even the most immature. For example, the youngest children could write "Come in," "Walk in," "This way out," etc. Sample hats were posted in the halls, with signs calling attention to their good points.

For several days before the sale the children practiced selling hats. One child was chosen for clerk and another for a customer, while the rest watched and offered helpful criticism. Many words, such as *becoming*, *reduced price*, etc., became the common property of all the children and were often used in other situations. When they began to sell the hats difficulties arose in adding the large numbers used for prices. The children solved the problem by changing the prices or by buying only one hat at a time. They were most interested in the dramatic possibilities in the beginning. A play telephone made from strips of wood and spools suggested telephone orders and charge accounts. Children had to know their street numbers in this connection, and the clerks had to write names and street numbers.

One child said that hats were always upstairs in a department store, so they must have an elevator. One was made from the sides of a large store box and equipped with all modern conveniences. Red and white electric-light bulbs were used above the signs "Up" and "Down." Mirrors were installed, and directions posted, such as,

WATCH YOUR STEP!

ALWAYS BE CAREFUL!

KEEP TO THE RIGHT!

Different children acted as elevator man at different times.

Making change was difficult, but the problems that were beyond most of the children were avoided by having a capable cashier. Problems within their abilities were attacked when they arose.

Other departments (handkerchief department, ribbon counter, glove counter, misses' clothing, and men's furnishings) grew in much the same way as the millinery department, though each one presented new needs. Some very crude results were accepted from the more immature children, but, on the whole, results were very carefully criticized. Space will not permit a detailed account of each of these departments, but perhaps a record of the growth of each will be of interest.

I. Millinery department (already discussed in detail).

II. Handkerchief department (goods displayed on window ledges, pinned to curtains, and put in boxes).

1. *Spoken language:* developments resulted from the discussions of how to greet customers and of what to say to make them want to buy; additions to common vocabulary, such as *customer*, *material*, *wears well*, *fast colors*, *no refund*, etc., were made; plans and criticisms of work were constantly being offered; and the habit of saying "I have" instead of "I got" was formed.
2. *Written language:* advertisements and signs, such as,

   HANDMADE HANDKERCHIEFS—
   5 CENTS EACH

3. *Number growth:* prices fixed according to worth of articles; plain figures; placing of dollar sign ($) and cent sign (¢) on proper side of number learned; distances judged and rough measurements of materials made.
4. *Handwork:*
   - *a.* Materials: tissue paper, crêpe paper, samples of goods, and drawing-paper.
   - *b.* Handkerchiefs decorated with borders painted, sewed, or applied, and marked with initials.
   - *c.* Handkerchief boxes made and decorated.

III. Ribbon counter (ribbon displayed on window ledges, and made-up bows pinned on curtains).

1. *Spoken language:* continuation of polite greetings; addition of particular things to say about ribbons—*attractive*, *lasting*, *becoming*, etc.
2. *Written language:* signs, such as,

RIBBON COUNTER

HAIR BOWS—25 CENTS

NEWEST RIBBONS—25¢ A YARD

3. *Number growth:* measuring ribbon by the yard (only one yard sold to a child); some comprehension of the relation between yard, foot, and inch; concept of 25 cents as a quarter.
4. *Handwork:*
    - *a.* Materials: spools, cans, and rolled-oats boxes to wind ribbon upon, crêpe paper, tissue paper, and wall paper for ribbon itself.
    - *b.* Ribbons flowered, striped, and bordered.
    - *c.* Some ribbon made up into children's hair bows.

IV. Glove counter (gloves displayed on standards made of wood and also pinned to curtains and set up in boxes).

1. *Spoken language:* plans, criticisms, comprehension of *mixtures*, *cannot be returned*, and *pair*.
2. *Written language:* signs, such as,

LATEST GLOVES—WOOL MIXTURES

KID GLOVES—ONLY $1

MITTENS

BARGAINS IN LONG GLOVES

3. *Number growth:* some addition necessary; also counting by 2's necessitated by too many gloves for the same hand.
4. *Handwork:*
   a. Materials: drawing-paper, glazed paper, and woolen goods.
   b. Gloves made by drawing round own hands.
   c. Variety of fasteners, stitching, and construction (a few made double and sewed round the edge so that they could be worn).

V. Misses' clothing (displayed on coat hangers and coat racks made by the children; paper-doll dresses hung on string under chalk rail).
1. *Spoken language:* special conversations about dresses; special inducements for buying; use of *alterations*, *repair*, and habituation of "I have none" and "I haven't any."
2. *Written language:* signs, such as,

EARLY SPRING DRESSES—$5

BARGAINS IN DRESSES

3. *Number growth:* use of dollars for prices of large dresses and of cents for paper-doll dresses; measuring and judging distances in making dresses; fixing size and price numbers and use of patterns.

4. *Handwork:*
    - *a.* Materials: crêpe paper, yarn for sewing, and all kinds of paper for dolls' dresses.
    - *b.* No two dresses alike; kimono pattern used for foundation; one party dress with straps over the shoulders; sashes, ruffles, and buttons popular; good color combinations.

VI. Men's furnishings department, developed in similar manner, contained collars of various kinds, neckties of tissue paper decorated with stripes and initials, some bow ties, trousers made of black and brown cambric (using patterns obtained from a tailor), handkerchiefs in boxes, socks, and shoes.

The "sitting-room" was transformed into a "ladies' rest room" for the occasion.

By this time the store had grown to such enormous proportions that there was no room for any more departments. Therefore the pupils had a big sale, sold out all the stock, and decided upon "The Owl Drug Store" as their next undertaking, as some of them had already begun making watches and clocks which could be used in a drug store.

CHAPTER XV

PROJECT: THE OWL DRUG STORE

This project was the outgrowth of a department store. The children were working on the watch and clock department in the department store. The store had grown so large that they had no room to display anything else. They wanted to have a new kind of store into which they could move their watches and clocks. A jewelry store was suggested, but its possibilities seemed too limited. One boy thought of the Owl Drug Store. An excursion to the downtown stores seemed impractical, so the children decided to visit the drug stores near home, and if they went down town, to be sure to visit one of the Owl Drug Stores.

They worked on watches and clocks for several days before they said anything more about the drug store in a group discussion, although they were reminded each evening to find out what they could about the drug stores.

The first group discussion brought out innumerable suggestions. It was decided to equip the candy department first.

When they took down the displays of the department store, one of the children remarked that the room did not look pretty any more. The group discussed the matter and decided that drug stores were not pretty unless they were decorated. The children investigated decorations, and found the windows of one store trimmed with cherry blossoms. These they easily made from pink tissue paper cut in four-leaved-clover shape and pasted upon bare twigs. They put the blossoms along the top of the sash curtains and used each window curtain and ledge for displays. Tables also were arranged under the windows.

This project covered two months, and nearly all the activities of the school grew out of it. The children could enter the building any time after 8.30 and choose any work they desired to do. There was always more spontaneous choice of reading at this time than at any other period of the day. At nine o'clock the school assembled for individual greetings and for a discussion of plans for the day's development of the project. The routine of school business was disposed of, seat work was discussed, and standards set up. In reading, the class was divided into four groups—two groups reading at once, each group being taught by a student teacher. (This room was one of the training centers in connection with Teachers College.) However, when one teacher handles the room alone he will accomplish more by having several small groups, even though they read less often. In this way each child may go at his own pace and work with children of his own stage of development.

All seat work was discussed by its own group, and the best product was selected to be put in the store. This discussion afforded splendid opportunities for language development. Stories and dramatizations often grew out of the project. Blackboard lessons also grew out of the activities in connection with the project work. Written records of parts of the project were kept by the children. Each day from 11.15 to 12 and from 2.30 to 3 the entire room was given free-work periods, when the children could choose work freely and work in groups or individually, in accordance with the liking of each child. After the first few days most of the free-work period was spent on some phase of the project. Group discussions always preceded this free period. Materials were placed upon the tables so that group work would be encouraged. This is the time when the skill of the teacher should be in evidence. By her skillful suggestions and pertinent questions she sets up ideals and standards of work in such a fashion that the children will select proper activities for the forming of desirable habits of work and study. During this free period the teacher likewise has an opportunity for studying each child in respect to his tendencies and abilities. Learning takes place most effectively when a child is working wholeheartedly (see "Laws of Learning," on page 16).

Some of the children visited the Owl Drug Store and discovered that it was made up of several departments. This led to the decision on the part of the children that they would put several departments into their drug store, such as a watch and clock display, a candy department, a toilet-article department, a picture and frame department, a soda fountain, and a post office.

Watch and Clock Display

Seat work for several days had furnished opportunity for experimentation with the making of watches and clocks. There had to be a group study of the way the numbers were put on a clock and practice in making plain figures. The children used an old wooden box as a counter, tacked two upright strips of wood at each corner, and suspended the watches from cords connecting the corners. Later on they made wrist watches, alarm clocks, and the like, and displayed them on a table and on the window sill behind the counter.

SUBJECT MATTER TAUGHT THROUGH THIS DEPARTMENT

Discussions of what to say about a watch to make people want to buy it resulted in the choice of such phrases as the following:

1. Keeps good time.
2. Crystal is strong; will not break easily.
3. Large, plain figures.
4. Works made carefully.
5. Guaranteed for a year.
6. Fine watch for men or boys.

These phrases were written on the blackboard, read, and new words learned.

When they played store various children took turns in selling and buying. A need for knowing name and address arose when some customers wanted the watches delivered. Each child learned to give his name and address, and most of the children could write both.

The first watches were cut from cheap paper. As soon as a good result was obtained by any child, a group discussion of its merits set a new standard of attainment. Many kinds were made out of good paper for the store. Chains were added to some of the watches. Gray paper was finally used to make them look nickel plated. Addition of dollars was necessary in buying. The main new problem was the variety of ways to pay for a dollar watch; that is, four quarters, two halves, twenty nickels, ten dimes, and various combinations of each. Cardboard money also was used in this connection.

In a few days a child suggested wrist watches. Many kinds were made, and boxes to hold them were invented from paper. One boy suggested putting cotton in the box to keep the fine watches from getting scratched. Some of the wrist watches had black straps, some a chain, and one was even made so that the back would open and show the works.

Discussions brought out additional language developments as well as an additional vocabulary; for instance:

1. Wrist watches for ladies and gentlemen.
2. Materials: gold, silver, platinum.
3. Figures and hands you can see in the dark.
4. Strong clasp.
5. Made in America.
6. Guaranteed for various lengths of time.
7. Repaired free of charge.
8. Initials engraved free of charge.

These new phrases were written on the blackboard, read, and the new words learned and used in discussions about the watch.

The need arose to learn to write initials. Price tags were put upon watches according to the worth of the article. Combinations of 6 were learned and all combinations of 2, 3, 4, 5, and 6 used in buying. All kinds of larger clocks were also made.

WRITTEN-LANGUAGE DEVELOPMENTS

Signs were written and placed in conspicuous places in the watch department, such as: Wrist Watches on Sale Today; Clocks and Watches; Little Giant Alarm Clock; Wrist Watch; Buy an Alarm Clock and Get to School on Time; etc.

All words written with capital letters for signs were later used, also, in sentences where they were not capitalized, and the reason explained.

The Candy Department

When the children started on the candy department, clay was suggested as the best material. As the clay was too wet to use the first day, the children experimented with other materials. Paper was used for candy canes, stick candy, etc. One boy used some wooden sticks, which he painted with red stripes and displayed in glass jars he had brought from home. One-inch colored sticks were used for mixed candy. Trays were made of paper, and small paper cups were made for measuring small candies. Later, clay was used, and many kinds of candy made and painted. Boxes of candy were decorated with crêpe paper, bands and bows of ribbon, pictures, etc. Some empty candy-kisses boxes were found and used for a ten-cent sale. The window space was divided into compartments by using strips of glass, and the loose candies were put inside. The following are some of the language developments:

1. *What to say about candy:* fresh, has good flavor, homemade, pure, made in a clean kitchen, has pure coloring, and the special attraction of each kind.

2. *When to eat candy:* not between meals, but after a meal; also how much to eat.

Written work was called for in the making of signs for the candy department, such as: Candy Department; Mixed Candy 2 cents a Dish; Fresh Candy; Pure Chocolates; Candy Canes; etc.

New number problems arose in connection with the prices marked on various candies. Likewise, the pound and half-pound boxes afforded number work. Very simple additions were used in this connection.

THE TOILET-ARTICLE DEPARTMENT

The children obtained some empty talcum-powder cans and a talcum-powder advertisement. They arranged these in a window. The department grew rapidly, and included brush-and-comb trays and sets, manicure sets, powder boxes and puffs, hand mirrors, soap made of wood and clay wrapped and labeled, toothbrushes, and tooth paste. The language developments were numerous; for instance:

1. *What to say about talcum powder:* pleasant odor, nice perfume, soft to skin, good to use after bath, fine for baby, good for men to use after shaving.

2. *What to say about brush-and-comb sets:* how decorated, colors go well together, initials; *brushes*—stiff, get tangles out; *combs*—some fine and some coarse teeth, made of strong material; *mirrors*—clear, well mounted.

3. *How to sell toothbrushes and tooth paste. Brushes:* curved to fit mouth, have stiff bristles, strong handles, sanitary. What to tell the people about the reasons for care of teeth.

4. *Characteristics of soap:* does not make skin dry, fragrant, has pretty wrapper, of convenient shape. Also the good qualities of each kind of soap (shampoo soap, toilet soap, and washing-soap).

NUMBER DEVELOPMENT

Number development followed as the children bought and sold soap in this department, the prices of soaps having been obtained by the children at the corner drug store. The war tax contributed its share in the making of number problems.

Again, such signs were written as: Soap; Talcum for Baby; Manicure Sets; Sale of Powder Today; Brush and Comb Sets; Save Your Teeth; Buy a Toothbrush; Fine Tooth Paste; Sale on Soap—4 Cakes for a Quarter.

Pictures and Picture Frames

One of the children suggested having pictures in frames on a counter. They saw in this suggestion many possibilities for growth in the fine arts. Different kinds of frames were brought to school and discussed. Pictures were made with crayons or paint, or were cut from books and mounted. All crayon work outlined in the course of study for this month was worked into this department. The boys made some wooden frames with swinging pictures. Sometimes for seat work each child drew a picture and suggested and wrote an appropriate name for it. The artist's name was put on a tag. Some of the pictures were left unframed and put in a book. Color schemes were discussed and results criticized. Care was taken to have the color of the mounting suit the picture. In selling the pictures good descriptions were necessary. As the pupils did not want to take down the pictures when they were sold, they wrote "Sold" on slips of paper to pin on them. Greater variety of prices furnished still further number possibilities.

THE POST OFFICE

The suggestion was made that many drug stores had a postal department. The boys were very enthusiastic over constructing a post office. They used a corner of the room. They at first tried to use large boards, but were unable to cut windows and places for letters and packages. They had a wooden bulletin board made from old yardsticks crossed at right angles over a vertical standard. This arrangement left an open space between the sticks. One of the boys suggested covering the whole thing with heavy brown wrapping-paper and cutting out a stamp window, a large place for packages, a slit for letters, etc. The completed "post office" was large enough for several children to get inside of it. The children brought old stamps from home. They made envelopes and sold stamped envelopes. They learned the use of special-delivery stamps, registered mail, parcel post, etc. They learned to address letters. Each child must know how to address an envelope to his mother and father, giving the entire address. Packages were weighed on real scales, and the proper number of stamps put on. Signs were needed: Post Office; United States Mail; Letters; Parcel Post; Stamps; General Delivery. The stamp window was covered with narrow paper strips for bars. The children played post office many times.

The Soda Fountain

The most interesting part of the store was the soda fountain. A mirror was used for the glass above the fountain. Faucets were made of paper and fastened below. Dishes of clay and of paper were made and decorated. Soda cups and ice-cream dishes were made of clay with cornucopias of waxed paper inside. Straws were obtained from a neighboring drug store. Tables were arranged near the fountain. The children decorated paper napkins, but decided not to use them for serving because the napkins used at soda fountains are always plain. These were sold in the store.

There was a good opportunity for language development. First the children talked about what to sell. They decided upon ice cream, sundaes, cones, malted milk, and lemonade. Later they added hot chocolate, crackers, and sandwiches. Coffee and certain much-advertised drinks were barred because in health talks they had learned these were not good for children.

The little girls made aprons and caps of white crêpe paper. Initials or owls were embroidered on the caps. Even an ice-cream freezer was made and labeled. Several menu cards were written after the children had all practiced writing the parts. A signboard was written and put on the wall. Signs were pasted about the mirror of the fountain, such as: Special Orange Ice, 15 cents; Chocolate Soda, 15 cents; Allen School Special, 25 cents; Owl Special, 23 cents; Plain Ice Cream, 20 cents.

The war tax on sodas called for new addition problems. Making change was more difficult here, and had to be done with everyone's help.

The children used one window for holiday specials, decorations, and favors. This window was changed often during the life of the project. By doing this on every holiday, the work of the regular drawing course could be used in the project.

Words the children actually learned to spell through this project were *clock*, *time*, *have*, *we*, *sale*, *good*, *can*, *candy*, *eat*, *drink*, *come*, *soap*, *baby*, *Mr.*, *Mrs.*, *sold*, *cold*, *ice*, *hot*, *see*, *fine*, *stamp*, *be*, *my*, *love*, *eggs*.

Each finished department supplied material for coöperative blackboard reading-lessons.

ACCOMPLISHMENTS

Let us now consider the educational merits of this project. In the first place the teacher was creating a situation in which the attitude of the children was most favorable for learning. The natural instincts for play, manipulation, and construction were strongly appealed to. The drive, or urge, was aroused within the individual members of the class, and was based on natural tendencies (see "Native Equipment," on page 3). In planning things to do, certain weaknesses or "felt needs" became evident to the children: the correct forms of expression they wished to use in connection with the work; a better knowledge of numbers as they had occasions to use them; a strong desire to construct worth-while articles for their store or to write signs; etc. The children were not only willing but anxious to get all the help they could from the teacher. They were even willing to drill hard in writing and in spelling words in order that they might contribute more and better things that would count for the success of the project. The law of readiness was a constant factor in all activities (see "Laws of Learning," on page 16).

A friendly rivalry soon sprang up in the class, developing originality and leadership. Each individual was conscious of the fact that he was contributing to the best of his ability to the success of the project. The spirit of coöperation and helpfulness was in evidence at all times. In other words, the group was practicing the principles of democracy in a miniature way, of course. They were, through practice, establishing ideals and habits for good citizenship (see "Democracy," on page 27).

The children were mastering the school arts (reading, writing, spelling, and numbers) and acquiring skill in their use. They were also acquiring good attitudes toward school and life. In fact, they were living in the midst of activities of their own which contributed joy and pleasure to them (see "Education," on page 5).

The test of any project is, Does it result in worth-while information, desirable skills, and proper attitudes toward school and life? The spirit of the children is the all-important factor in any project. Without this the project falls flat, and the work becomes formal and uninteresting, hence a failure.

CHAPTER XVI

PROJECT: AN EXCURSION TRAIN[1]

This project was worked out by first-grade children toward the close of the year. The possibilities of a previous project had been exhausted, and the last few weeks of school demanded a strikingly different idea to keep the children working in groups on one large project rather than to let them go back to the more individual work of the beginning of the year.

In talking over plans for the summer vacation it was found that many of the children were going away on the train. One of the children suggested playing train. The full possibilities of the project did not appear to the teacher at first, but a group discussion led to enthusiastic plans for a "real excursion train." The project seemed to offer greatest possibilities along the line of dramatic play, but when the teachers made for themselves a pre-plan of possibilities in subject matter to develop through the project, they too became enthusiastic. A trip to the Union Station started the project. The previous discussions furnished a background of "what to look for."

The children changed the teachers' plans in many instances and added to every possibility. The project lasted over a month, until the last day of school.

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[1] Printed in *Primary Education*, May, 1922.

All seat work grew out of the project. The periods when other groups were reading furnished excellent opportunity for experimentation with the cheaper materials. Discussions by all the children preceded each period of seat work. After each period of experimentation like this the children came together to see and discuss the results. No finished product made by the teacher was given to the children for them to copy. The beginnings were always imaginative, although a good mental image of the thing to be made was gained in the beginning by discussions and by seeing the different varieties of articles themselves when possible. The children who could show a good product after some experimentation were allowed to use the better materials. Each article was criticized and accepted by the group before it was used in the large project.

The first few discussions brought out many suggestions covering the whole field. The teacher was eager to seize upon all suggestions of the children which could be profitably used. Many suggestions, however, were not practical, and when this was the case the teacher quickly led the plans in another direction. For instance, the children wanted both the Union Station and the excursion train. As several types of stores had been developed earlier in the year, the children wanted to move all these into the station. The teacher foresaw that lack of space would prevent having every kind of store, so the counters in the station were limited to a fruit counter and a counter for books and magazines (both new store possibilities).

Enough project work had been done earlier in the year so that the children realized they must work on one part at a time. They decided to choose some of the children and try them out for their parts, and at the same time work upon some part of the project in both seat-work and free-work periods. Nearly all the language work came out of the project.

The first need was to choose various employees about the station. Following discussions of what each one should do and say, various children were tried out before being chosen for permanent parts. The rest of the children sat on the floor and followed developments closely, criticizing at the end. They tried to avoid memorizing any part. At each playing the language took a slightly different turn, although some of the most desirable phrases were adopted permanently.

When the train and station were equipped, parts of the journey were discussed and played. For instance, it took a week to discuss and equip the dining-car and play it in parts. After a month's planning and working the children chose a mother, a father, and two children to make the trip.

All the employees of the station and train were in their places, while the rest of the children sat quietly in a group and watched the family of four consult the information man, buy tickets, check baggage, buy fruit for the children, go to the train, and take the entire journey. Several different families were chosen at different times.

Record of Subject Matter

Practice in spoken language was occasioned in discussing the following topics: (1) what was seen at the station; (2) what various children already knew about trains; (3) what the various members of the train crew and employees of the station say and do; what the conductor does; what the man who sells magazines, candy, and fruit says about his articles; what the dining-car employees, waiters, and manager say and do for the passengers. Children were chosen to act in these various capacities and to make appropriate announcements. One child was selected to go through the train and announce meals. The duties of the engineer, the fireman, and the brakeman were told about. Likewise the duties of the porters on the Pullman cars were discussed. The children told how the people pass the time, reading, crocheting, talking, discussing the scenery, playing with babies, helping old ladies, etc. Red-caps and what they do were talked of. The man at the ticket window, the woman who helps travelers in the waiting-room, the baggageman, the transfer company, all furnished opportunities for oral language. All these people connected with the station and train were characterized by the children in connection with the carrying out of the project. With the help of the teacher they planned a trip to New York by way of Chicago, Detroit, and Cleveland. They talked about some of the dangers of traveling, and the necessity for each child to know his name, his parents' names, and his address. This furnished a splendid opportunity for spontaneity on the part of the children in planning, judging, and organizing, as they staged and dramatized the various activities connected with the "excursion train." The children were getting practice in group coöperation. Likewise, opportunities were afforded for the development of initiative, individuality, self-reliance, and leadership. Under the skillful guidance of the teacher they were living a democracy in embryo.

ADDED TO VOCABULARY

The following words and phrases were added through usage to the vocabulary of all the children: *change cars, pass, half-fare, station, interesting stories, latest books, dining-car in rear, porter, brakeman, fireman, engineer, all aboard, Pullman, berth, sleeper, information, round trip, baggage, coach, platform, reduced rates.*

CORRECTIONS OF ENGLISH FORMS

The following corrected forms received much practice in class and group discussions: "I have," instead of "I got"; "I saw," instead of "I seen"; "I have none"; "Do you *wish* any?" "Is there anything else?" "Have you any?" "May I help carry your grip?"

WRITING

By the end of the year the children were able to write anything fairly well; consequently much of the written work in connection with this project was done in groups. The children who were able to do it wrote original signs and practiced them on the blackboard and on large sheets of paper. Some writing-lessons were given all together, at which time each child wrote the same thing, and the best results were chosen to use. The younger children contributed much more than they ever had before. The simpler words were spelled also, but the longer words, like *information*, were written from the teacher's copy on the board.

It was found that the children were apt to form bad habits of capitalization unless a careful explanation was made of why the signs were capitalized and unless the words were used in other lessons without the capitalization (for instance, in recording parts of the excursion in connection with the reading-lesson).

Record of Writing-Developments

The following words and phrases were written by the children and used in connection with the various features of the project: *information*, *to outgoing trains*, *in*, *out*, *waiting-room*, *tickets*, *Pullman*, *checkroom*, *baggage*, *transfer company*, *bulletin board for time-tables*, *on time*, *late*, *fruit*, *books*, *new books*, *books to read*, *train*, *chairs*, *wait*, *bill of fare in dining-car*, *names of stations*, *names on tickets*, *numbers on berths*, *sign to stand against train*, *train to Chicago*, *train to Detroit*, *train to New York City*.

Number Developments

Many lessons and activities of the groups called for the use of numbers as the project progressed in connection with making change for tickets; telling time; selling fruit, magazines, candy, etc.; figuring the cost of meals on the dining-car; counting up what several meals would cost; paying red-caps in dimes; paying transfer man in quarters.

Fine and Industrial Arts

Much of the handwork was motivated in connection with the arrangement of the train and station as to utility and beauty. This work called for much activity in industrial art; that is, decoration of fruit and magazine stands in the station; labels for books and magazines; artistic arrangement of pictures in books and on counters; various designs for covers on candy boxes cut out of tissue paper; decoration of paper plates in the dining-car; dining-table decorations; monograms on napkins and tablecloths; aprons for waiters; fruit baskets and suitcases made from cardboard boxes; pocketbooks; fruit, painted and shellacked; the use of clay and cardboard in making candies, chocolates, "all-day suckers," etc.

Arrangement in School

The Union Station was arranged in the cloakroom, which had a window. Cars were arranged along the side of the room. Little chairs were used for cars, one car to a window. A table turned upside down on another served as upper and lower berths, with curtains of crêpe paper. One corner of the room was fitted up for the dining-car, and much of this equipment the children brought from home.

CHAPTER XVII

PROJECT: THE CITY MARKET

After a month or more of building and playing station and train the children decided to tear up the station to make room for a city market (see Chapter XVI). The market had begun through the use of some clay rolls, bread, etc. that some of the youngest children had made. It had grown to include other foods. The train was still the pride of the children's hearts, and they could not bear to disturb it. Finally, someone suggested changing the train into a street car to get down town to the market. This transformation was easily accomplished by changing the seating arrangement, putting advertisements above the windows, adding straps, a fare box, a motorman's compartment, etc. A roll containing the names of all the city street cars was put at the front of the car and turned as needed. One boy of an exceedingly inventive turn constructed a wheel and an air brake for the motorman's use.

This illustrates how one activity leads on to another utilizing habits already set up in previous projects.

After the street car and market were completed, the children had many discussions and much practice in the parts they played going to market on the street car. The conductor and motorman managed the car, and a few children at a time went to market where the people cried their wares.

Record of Subject Matter

STREET CAR

Spoken language: conversations about the building of the street car; ways of advertising goods above the windows of the car; necessary changes of scenery in the windows; duties of conductor, traffic policeman, etc.

Written language: advertisements, using pictures cut from magazines, and a descriptive sentence, such as,

USE THIS TOOTH PASTE AND SAVE YOUR TEETH	SAY IT WITH FRESH FLOWERS	WHITE SOAP SOLD AT ALL GROCERIES

Signs in and about the car: Safety Zone; Car Stop; Please Do Not Talk to the Motorman; Leave Car at Front Exit; No Smoking; Please Have Change Ready; Be Careful; Baseball, Blues and White Sox; etc.

Number growth: use of full and half-fares, and different combinations of pennies to make the eight-cent fare.

CITY MARKET

1. *Baking-department.* This department was built in one corner of the room, with a large display window in front. Trays made of black paper contained rolls, doughnuts, jelly roll, bread, cookies, pies, etc. Canned goods suitable for picnic lunches were arranged on shelves. Pickles and olives cut from paper were pasted on the inside of bottles. Many signs were necessary, and more number work was involved than in any of the previous undertakings.

2. *Plants and flowers.* An entirely new development offering great possibilities in art was suggested in the selling of plants and flowers. Baskets were made and filled with flowers cut from colored paper. Some were pasted upon the blackboard in rows, as if on shelves. The children said that many times flowers were ordered and delivered later, and therefore they could mark them "Sold" and not take them down. Besides, they had some real ferns and flowers on tables beneath. The surrounding country was scoured for wild flowers and pretty plants, and new ones were brought in every day.

3. *Vegetables and fruits.* Shelves were drawn upon the blackboard, fruits in crates and baskets were pasted on the shelves, and the tables beneath were loaded with fruit and vegetables which could be carried away.

Conversations arose concerning the handling of foods, the ventilation of street cars and homes, etc., and signs were posted, such as:

EAT FEW PICKLES

EAT FRUIT AND KEEP WELL

EAT OUR CANDY AFTER MEALS

DO NOT TOUCH FOOD WITH YOUR HANDS!

These group undertakings as described did not, by any means, constitute all the work of the school. Individual and smaller group activities were equally productive of growth, and many other valuable experiences were met by the whole group when they arose in the life of the school. Literature made its appeal to both individuals and groups. Music, too, furnished projects in itself as well as helped in the development of other plans.

Thus it will be seen that the spirit of this project work carried over and permeated all the school activities: language, both oral and written, spelling, number, hand work, reading, etc. But, best of all, the children were forming right attitudes toward school and school work. They were acquiring habits of study and a technique of procedure that will be continued throughout their school life, as is shown in some of the previous chapters of this volume.

CHAPTER XVIII

PROJECT: THE BUILDING OF A COMMUNITY

The idea of building a house came to the children during a discussion about the rebuilding of a home which had been burned in the neighborhood. One of the kindergarten teachers had been notified during school hours that her home was on fire. This caused a great deal of excitement and discussion among the children. They wondered who would put out the fire, and this question led to a talk about the firemen—what they do for the people, where they stay, what kind of men they are (brave), how they get to the fires, what they use to get into houses, and the different ways of putting out a fire.

The children wished to build up the house which they played had been destroyed by fire. For two days different groups worked on houses for one period. They then selected for use two of their best products. The second day, accompanied by the teachers, they took a short walk about the neighborhood to look at real houses. Special attention was given to the distances between houses and from houses to the street. Many details, such as windows, doors, foundations, porches, porch furniture, roofs, chimneys, trellises, letter boxes, fire plugs, and garages were noted by the children.

Since they now had two houses built out of their kindergarten blocks, someone suggested that they build other things which the people in the homes need. This called for the making of sidewalks and a street in front of the houses. How were the people to be protected from fire? It was suggested that a fire station be built, and that fire engines be made out of pasteboard. The children also suggested a need for fire plugs to stand near the curb.

What other things would the people need? Automobiles were suggested, and along with the automobile came a need for garages and driveways.

The need for a grocery where the people could buy provisions was suggested. Consequently the children decided to build a grocery store across the street. They talked about how wide the street should be, about the sidewalks, parkways, street lights, telephone poles, mail boxes, etc. They took another short trip about the neighborhood and noted all these things, and when they came back to the kindergarten room they were divided into groups, each group undertaking the responsibility of making some particular feature of the miniature community. One group worked on the telegraph poles. They cut paper in proper shape, so that when it was rolled it would make a tapering pole like the ones they had seen near their homes. The height of the telegraph poles should be in the same proportion to the height of the houses as that of the poles in the street to the real houses at home.

By this time the children were fully conscious of the fact that they were building a community. They made a long list of other buildings which could be built in this little village. This list was put on the blackboard, and they selected only the most necessary ones to construct because they were limited by materials.

One group made the water plugs out of clay and painted them red like real water plugs. Two children constructed a street-railway track, using small strips of wood for the track. Others made street cars out of paper, pasting the parts together.

It was decided that a drug store was needed in order that the people could get medicine in case of sickness. So a drug store was erected on the corner. Articles suitable for a drug store were made and displayed in the windows. An awning was cut out of paper and placed over the show window.

A schoolhouse was built at the head of the street. This called for many details. A wall made out of small blocks inclosed the playground. Playground equipment was made and placed in the school yard. A space for a sand pile was inclosed with small blocks, and real sand was used. Swings were made out of sticks and strings. Slides were built out of stiff cardboard. A giant's stride was made out of poles, rings, and cords. During the free-hand-cutting periods the entire class cut out representations of children and placed some of the best products in the various play centers on the school yard. A flagpole was made out of rolled paper, and a small flag floated at the top.

While certain groups of children were planning and equipping the playgrounds round the school building, others were working on things to be placed in the yards about the homes. Walks made out of strips of wood were laid round some of the houses. Trees cut out of paper were placed in the yards. One bird box was made out of craft paper and put up. A neat "Keep off the Grass" sign was printed on cardboard and placed in front of one of the houses. Flower boxes made out of cardboard were placed on the porches. Porch furniture, consisting of swings, chairs, tables, etc., was cut out of paper and placed on the porches. On Monday it was decided that there should be clothes hanging on a line, because it was wash day. The children cut out little dolls' clothes, sheets, tablecloths, and napkins, and pinned them on the line.

One child whose father was a dairyman said, "We should have milk wagons to carry milk to the people." So his group made milk wagons, and the best one was selected for use.

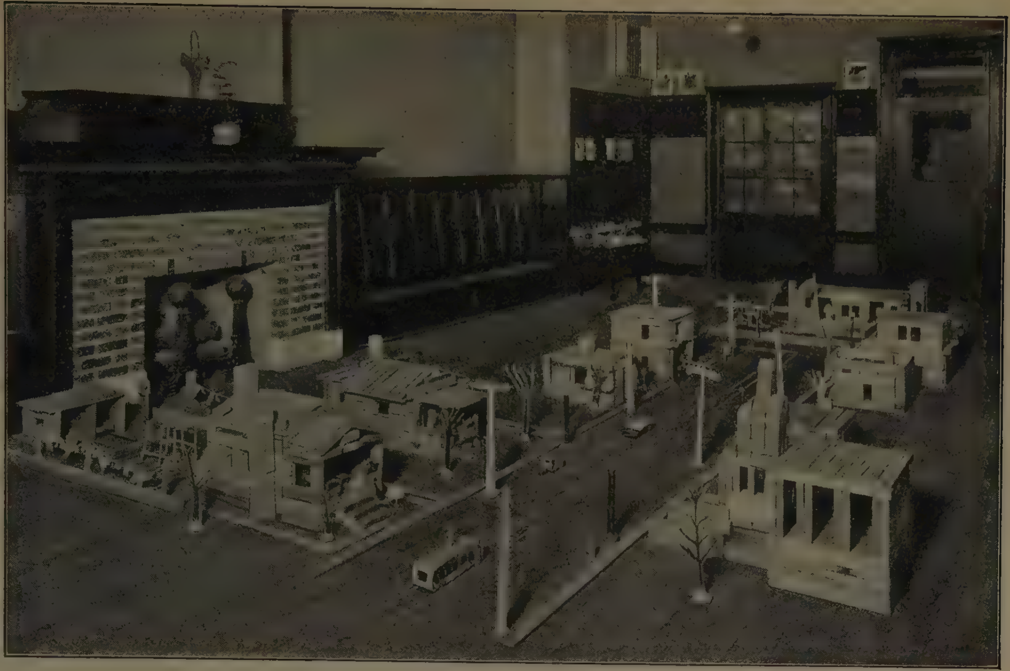
Where should the people go on Sundays? This question suggested a church, which was erected out of building-blocks.

A fire station was built and a fire engine cut from pasteboard, on which were placed many of the furnishings belonging to a fire engine—a hose made from a heavy string, ladders cut out of paper, a toy gong to ring, etc. The fire engine was colored red like a real engine. Firemen were cut out of paper and made to stand about the engine house and on the fire engine.

Another group worked on a filling-station. They used real sand for the driveway. Appropriate signs were printed and posted in front of the filling-station. A paper caretaker stood at the entrance filling the tank of an automobile that had been made out of pasteboard and painted black.

A picture show, of course, was a necessity; consequently one group built a picture show out of their blocks. A paper frame upon which the picture of popular motion-picture actors had been pasted stood at the entrance.

Mail boxes were made out of craft paper, painted green,



COMMUNITY LIFE AS WORKED OUT BY KINDERGARTEN CHILDREN and placed at the street corners. All mail boxes, telephone poles, light posts, etc. were held in an upright position by means of clay at the base.

Thus from a small beginning, growing out of a community incident, there grew up a genuine project for the children. They took turns in playing with the various features of the project, taking rides on the street car, placing their toys in proper positions on the playground equipment, mailing letters, going to the picture show, the grocery, and the drug store. They even took their automobiles to the filling-station for gasoline. One of their chief delights was to conduct visitors through their little village, pointing out and explaining all the interesting features.

No doubt the teacher, quite early in the development of this project, formulated in her own mind some conception of the general plans and scope of the work to be accomplished. Yet its maximum possibilities were not foreseen at the beginning. But they unfolded as the work expanded through the development of needs and interests on the part of the children.

Of course certain more general and ultimate aims were constantly in the mind of the teacher: (1) to set up habits for wise and effective citizenship; (2) to acquire proper attitudes toward school and life in general; (3) to develop habits of quick, clear, rational thinking, the children testing their own thoughts and the statements of others; (4) to inculcate in the schoolroom the principles of democracy; (5) to train for leadership and group coöperation; (6) to lead children to the evaluation of their own ability and to the determination to live up to their greatest possibilities.

It will be noted that these ultimate aims are practically the same as the ultimate aims in all school work, in each grade throughout the child's school life. It is not supposed that these aims will be fully realized in the kindergarten-primary grades, but there should be a uniformity of ultimate purposes constantly in the minds of the teachers and before the children throughout their entire elementary-school life. This uniformity of purpose is an absolute necessity if desirable habits are to attain maximum efficiency with minimum effort.

The activities in connection with this project had their roots in the original native instincts of the children. There is a well-defined impulse in children to engage their energies upon some project which will grow under their hands. The creative instinct and the desire for manipulating materials find their greatest satisfaction in those activities to which some use is imputed (see "Native Equipment," on page 3).

Because of their love of display the children experienced great satisfaction in each successive stage of development in the growth of the community. They were eager for and interested in the individual features of the project as each contributed toward the success of the whole (see "Laws of Learning," on page 16). The drive, or urge, was in the children (see "Drive," on page 9). They were practicing group coöperation and learning to direct their own conduct with due regard for others (see "Democracy," on page 27). They did much planning, judging, organizing, and executing of purposes. There was a dominating purpose in the minds of both individuals and groups of children which served as the guiding impulse throughout the entire project (see "Thinking," on page 21).

During all these activities the teacher was constantly directing the whole affair by means of questions and helpful suggestions, but in no wise did he dominate the situation with his own preconceived ideas of what should be the outcome of the project. It was his duty merely to steer the native impulses of children into activities that were worth while and educative.

Compare the spirit of these kindergarten-primary projects with that of the project work of the intermediate and upper grades as portrayed in the earlier chapters of this volume. The material worked with, the nature of the work, and the finished product varied with the age and natural interests of the children, yet the same laws of learning, the same drive (or inner urge), the same factors of reflective thinking, the same principles of democracy, and the same general ultimate objectives underlie the whole procedure of both.

What would be the effect upon a group of children if they could spend their elementary-school life, from the kindergarten to the high school, constantly in the atmosphere and spirit of classroom work such as is portrayed in this volume? No one knows; for no one as yet has ever seen such a group, although this condition is being approximated in a few of our more progressive school systems.

CHAPTER XIX

SOME DANGERS GROWING OUT OF THE PROJECT METHOD

THE SOCIALIZED RECITATION

"The socialized recitation" is a much-abused term. Someone has well said: "Its name is a misnomer, for it is not a recitation at all. It is not a school activity to be sought as a thing in itself." On the other hand, it is the result of certain conditions in which children are working together in a class toward a common end. It is a term applied to that type of school activities in which the children are working in a social group in accordance with the laws of learning and the principles of democracy. It is the name applied to those activities occasioned by the class, such as group planning or judging, organizing, and executing class projects. In such activities the pupils are discussing problems pertinent to the occasion: they are collecting materials and information, both individually and in groups, for the success of some common end (project), and are reporting these to the class, where such material and information are weighed and discussed in accordance with parliamentary law or the customs of society.

The socialized recitation does not mean any particular procedure, such as a pupil's conducting the recitation in the capacity of teacher or chairman, or the children's asking questions of one another. These activities may or may not be present in socialized work. It is the spirit in which the pupils coöperate in a social group while working together for a common purpose that constitutes the socialized activities (socialized recitation). Many teachers have forced the children to assume the outward formalities of such socialized activities by requiring them to work in certain ways, such as asking questions of one another even when they have no question to ask, criticizing mistakes, or forcing suggestions, all for the purpose of having a socialized recitation.

A teacher was once conducting a grammar lesson in the usual formal question-and-answer manner when a visitor entered and requested to see a "socialized recitation." The teacher, in order to comply with the request and to give a sample of this type of recitation, asked one of the pupils to come forward and to take charge of the class. Then the pupil conducted the recitation in much the same manner as the teacher had done. In the meantime the teacher stood in the back of the room talking with the visitor, telling him of the wonderful merits of the socialized recitation. Obviously the spirit of socialized work was totally absent in this case.

"The socialized recitation" is a term applied to those activities which naturally result when children are working together in a whole-hearted, purposeful manner on a project. In such cases we see children working together in groups; we observe them questioning one another, intelligently discussing statements and materials contributed by their associates, and "carefully considering any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends"; we observe certain freedom in moving about the room; we sometimes see a pupil leading or directing the activities; we see pupils active in asserting their own initiative in the way of asking questions and giving suggestions or thought on the project in hand; in fact, we see new, oftentimes strange, procedure on the part of children, all a most natural result of the new organization of subject matter.

It is a mistaken idea, however, to assume that this socialized work is to be in evidence at all times. Certain drill, more or less formal, must follow up any weakness in the fundamentals which comes to the surface during socialized activities.

The spirit of the work as portrayed in the foregoing projects in this volume should give a true notion of socialized activities in connection with school work.

Problem; Project

There is much confusion in the minds of teachers as to the meaning of the terms *problem* and *project* and their relation to each other. A study of the literature on the project method shows that no clear-cut distinction has as yet been made between the project and the problem method of teaching. As a matter of convenience the discussions in this volume (perhaps arbitrarily so) assume that the *project* is the term applied to the larger unit, while the *problem* is the term applied to the individual difficulties arising in connection with the working out of the original project or unit of activity.

GROUP WORK

The term *group work* is used in this volume to designate that form or type of school activity in which the children work in small groups. This group idea is often much overworked in cases where the spirit of the project is lacking. Group work should grow out of an effort to supply the most favorable condition in which the laws of learning and the principles of democracy may function effectively, and its value should be defined in terms of the degree in which it contributes to this situation. A thorough understanding and appreciation of this purpose in forming groups should aid the teacher in determining when groups should be formed, how they should be formed, what size they should be, and in what ways they should function in their relation to one another; but to use the group plan merely for the sake of using it or because another teacher uses it successfully will surely result in a formal, unnatural situation.

A good illustration of the forming and use of groups is found in the project "A Literary Contest" (Chapter IX).

SUPERFICIALITY

This type of work requires much thought and planning on the part of the teacher in order to utilize time to the best advantage and to avoid superficial results in the mastery of the tools of learning. We cannot, at present at least, rely wholly upon the project for sufficient practice to insure desirable mastery of the fundamentals. Definite and purposeful drill must follow in connection with project work. Three distinct phases or purposes should accompany the complete process in connection with project work. In the first place, certain weaknesses or needs on the part of children will come to the surface as they work naturally and freely. In the second place, the teacher should skillfully guide the children into a realization of the need of special work and drill on those weaknesses which arise out of a natural situation. This felt need for a better mastery of spelling, number work, writing, language, etc. should put the children in a receptive attitude toward necessary drill work. This situation should provide for the law of readiness, "To act when ready to act gives pleasure and satisfaction." In the third place, project work should afford an abundance of opportunities for practice in the use of the fundamentals. Complete learning of the fundamentals, like complete learning of the principles of democracy, means that their usage has been reduced to automatic conduct. This last stage of project work should furnish constant practice in the automatic use of these fundamentals and also should act as a check on learning-results. In this manner the spirit of the project should carry over and permeate the more formal drill work. Under such circumstances it is likely that interest will run high even in drill exercises. Pupils may be seen planning and conducting drill lessons among themselves. Competition for excellence often becomes very keen. Drilling in these fundamentals, if resulting in satisfaction, will be no bugbear to children. The necessity for this second phase of drill work in project activities should lessen as time goes on. At the end of the school year a stenographic report of a class discussion in a sixth grade should reveal few errors in the use of English where this plan has been successfully carried out.

Real weaknesses and faulty habits crop out when children are intensely interested in *what* they are doing and when they are off their guard as to *how* they are doing it. Under these conditions strength and good habits that have become automatic are likely to function.

A true measure of success in respect to language usages should be expressed in terms of the extent to which correct forms, both oral and written, are automatically used in the free discussion of school activities. In a similar manner the results in number, spelling, writing, reading, judging, planning, organizing, and even the principles of democracy should be judged.

The eight projects given in this volume will portray the spirit of this discussion and give a clear conception of the schoolroom procedure used and the results obtained.

THE MISUSE OF METHOD

There is danger in overemphasizing any method of procedure. We hear much about the method of teaching and not enough about the method of learning. This results in "fads" and "frills." A good method should supply simply the conditions for economical and effective learning. Part One of this volume aims to set up the foundation for method and the goal to be attained through it. The project method seems at present more nearly to supply these conditions than any other. Time and experience, however, may bring forth even a better method. Who knows?

CHAPTER XX

THE OUTLOOK FOR THE PROJECT

Just as the world in general is constantly in a state of change, so should be the standards and aims of education. With changes in the aims of education it necessarily follows that there will be changes in methods of teaching, since method is merely the way in which certain aims are realized. The project method is the outgrowth of an effort to find a way in which certain new standards and more comprehensive aims of education may be realized. This new conception of the project method in school activities presupposes that there are or will be (1) new aims and ideals to be attained, (2) new objectives to be realized, and (3) new materials to be used. The project method is the term we apply to a particular way in which children are brought into contact with these new ideals and new objectives.

Much has been said in this volume as to the merits of the project method relative to its supplying favorable situations for the operation of the laws of learning and the principles of democracy. At the same time the school arts have not been neglected. The ability to read rapidly and to comprehend what is read is shown in connection with the project "A Literary Contest" (Chapter IX). Standardized tests were used frequently to ascertain the acquired abilities in reading, writing, spelling, geography, history, and arithmetic. These served as a means of checking up on the learning of the fundamentals.

Project work that seems to be attracting most attention from the educational platforms and magazines of today is of a type which deals more largely with materials and subject matter almost completely outside of the usual school life: "Determining the relative size of toothbrushes used by the students of a certain high school," or "A certain high school conducts a campaign against the sale of impure milk in the city," or "A fly-swatting campaign is to be carried on by the seventh grade."

Now, these activities may all be very profitable to the children in many ways, and there is no thought of criticism on the part of the author. We should, however, be fearful of the results, in our present status, if all the school work from kindergarten to high school should swing round such types of projects. In the first place, the general teaching corps has had little or no training in such activities. This change from the old to the new must of necessity take a long time; and the transition should be gradual and without clash or conflict, just as in the case of the rebuilding of a certain railroad station where in the course of three or four years every piece of the old station had been removed and a magnificent structure was standing in its stead. During the entire time traffic was never blocked. In a similar manner should changes come about in educational methods.

Moreover, project work in school is quite similar to project work in many other lines of activities. Most of the worlds' activities are carried on through projects. Such municipal projects as "Building a new water plant," "Developing a boulevard system," "Widening Main Street," "Building a city hall," etc. are quite familiar to all. Such commercial projects as "Promoting a railroad" or "Opening up a new bank" are also in operation. Public-spirited organizations often undertake such projects: the purifying of local politics, or the starting of propaganda for a new post office, or giving a historical pageant. All are familiar with the Muscle Shoals Project. So it is with all great public and private undertakings; they are constantly referred to as projects.

The project method in school activities has done much toward creating in the school situations like those in real life. Project work in school is carried on in much the same way as it is carried on in real life. The technique for work is much the same in the one case as it is in the other: both call for much planning, judging, organizing, and executing; the true spirit of democracy has equal chance in both situations; in either case, a guiding purpose furnishes the drive, or inner urge; the participants in each instance are meeting the requirements of citizenship in a democracy.

CHAPTER XXI

SUGGESTIONS FOR PROJECTS

Any genuine project must appeal to some of the native instincts or tendencies of the pupils, such as play, curiosity, gregariousness, and coöperation, display and desire for approval, ownership and collecting, manipulation and construction. While these native tendencies are present in all children they vary greatly in strength (see "The Project," Chapter II).

The occasion for a project is the most difficult, yet the most essential factor in launching it. The information and materials necessary for the successful completion of a project can usually be found if there is a genuine interest. It is the occasion that furnishes the strong appeal to the above-named native instincts in children. Occasionally we find a case in which information for information's sake may appeal strongly to some of the child's native instincts, but not often during the first six or seven years of school life.

It is not a difficult matter to suggest materials and sources of information for project work, but it is exceedingly difficult to suggest the occasion out of which the project itself may be successfully launched. Each local situation must furnish its own occasion for the project.

In the following suggestions the author has tried not only to indicate subject matter and materials but also to suggest how local situations may be created out of which projects may grow. Part Two also furnishes helpful suggestions as to creating and manipulating situations for starting project work.

For a pre-plan in the teacher's preparation for a project follow the spirit of Chapter II of this volume. Remember that the worth-whileness of the project depends upon the degree to which the pupils acquire (1) desirable knowledge, or information; (2) desirable habits or skill in the use of the tools of learning (reading, writing, numbers, spelling, etc.); desirable habits of conduct for democracy; (3) desirable attitudes toward school and life in general (see pages 9–11, 13).

PROJECTS

1. A project worked out showing the relation of good roads to education would certainly appeal to a rural community.

   a. The possibilities of this project will depend upon the general attitude of the patrons of the district.

   b. The principal and teachers might make this the occasion for creating a lively interest in consolidated schools.

   c. This project should furnish more than the average educational possibilities; for example:

      (1) Information as to Federal and state aid in road-building.

      (2) A study of all kinds of bonds used in the building of roads.

      (3) A study of what good roads have accomplished in making possible the consolidation of rural schools.

      (4) An inquiry as to the extent and location of consolidated schools throughout the United States.

(5) Information as to the advantages afforded in some of the more progressive rural educational centers through pictures and literature secured by the pupils, information as to size and cost of buildings, number of both elementary-school and high-school pupils, qualification of teachers and their salaries, cost per pupil, rate of school taxation, etc.

d. All information throwing light on the desirability of consolidated schools could be arranged so as to furnish a splendid evening's entertainment for patrons and friends of the school.

e. For suggestions and inspiration for working out this project see some of the projects recorded in the earlier part of this volume.

2. A project might grow out of the activities connected with the erection of a school building in the community.

3. A project might grow out of the determining of a well-balanced meal, using information as to the food values of various foods.

4. The building of a bridge in the community might be the occasion for a project.

5. A calf club might work out a project in connection with the county fair.

6. A potato club might work up a good project in connection with gardening.

7. A corn club could be interested in a corn display.

8. A poultry show would furnish a splendid opportunity for a genuine project.

9. A safety-first project might grow out of a local fire or an automobile accident in the community.

10. A splendid project based upon health may spring up out of some local epidemic (see Chapter V).

11. The installing of a radio outfit in the school might furnish the occasion for a good project.

12. A chemistry class in a rural high school might arrange an exhibit of the different soils of the surrounding community, with valuable scientific information as to the proper care and fertilization of each type of soil. Such a scientific study made by a class, even though the class be small, should be very entertaining and profitable to the farmers of the district.

13. A nature-study class could give a Thanksgiving banquet. Each member of the class might impersonate some wild animal or wild bird of the community. Foods of these different animals and birds might be on the banquet table, each pupil partaking only of the food eaten by the animal or bird he is representing. Each pupil might respond to a toast in which he could recall all the peculiar habits and characteristics of the particular animal or bird he is impersonating. This project would afford unusual opportunity if the teacher is wise in his suggestions.

14. A splendid project might be worked out in landscape gardening in connection with the beautifying of the homes in the community. The members of the class could point out the desirability of various shrubs, trees, and flowers used in beautifying homes. The class could compose a play to be given in connection with lantern slides. The different qualities and characteristics of each tree, shrub, or flower would be revealed through the play and pictures.

15. An exhibit of wild grasses and flowers of the community might be made and explained by a class in connection with the farm display at the fair (see Frontispiece).

16. A project based on good sanitation might be raised in connection with the sanitary conditions of some villages or small cities.

17. If the teacher can create the situation or can take advantage of some suitable occasion, a project can often be raised in connection with the study of the products of a country.

18. A community fair in which the children compete for prizes in their various home projects might be held in the schoolroom.

19. A class might prepare an exhibit of troublesome insects on the farm and show the scientific remedy for each.

20. The building of an apartment house in the vicinity of a school became the occasion for a splendid project in a seventh grade. The drawing of plans, the measurement and cost of the lot, the development of the whole taxation scheme, the topic of interest for the use of borrowed money, banking, and the question of insurance are all within the possibilities of this project.

21. The dramatization of stories from history may afford a splendid opportunity for good projects: the settlement of Georgia, the settlement of New Amsterdam, the settlement of Jamestown, various conventions or historical assemblies, etc.

22. Some public event, such as the erection of a monument to the soldiers, might suggest the writing of a poem by the pupils. This task may become a genuine project for some of them.

23. One fifth grade made a booklet composed of pictures, drawings, and information based on the fishing industry. The booklet was to be left in the room for the next grade to use.

24. The printing-press might easily furnish the subject matter for a project, provided the local situation furnished the occasion for a project based on this subject.

25. A puppet show to be given by a primary grade affords a splendid occasion for a project.

26. The exhibition of all iron products, with complete information as to the importance of iron to the progress and wealth of our nation, might furnish the basis for a splendid project.

27. With the use of a sand map construct a typical irrigation system, and give information as to the extent and importance of irrigation in some of our Western states.

28. A splendid project might grow out of the conservation of our forests.

29. An exhibit of all the different products made from wheat or corn or leather, together with full information as to the manufacture of each product exhibited, would furnish the material for a good project.

30. The construction of a modern dairy farm, using sand map, blocks, etc., and the giving of detailed information as to how to conduct a successful dairy might make a good project.

31. To make an exhibit of coal products, showing drawings and pictures of a large coal mine, and to give information as to the coal industry would make a splendid project.

32. A certain high-school girl gave as her graduation theme "My Dream." She dreamed that she made for herself a beautiful hat in connection with her class in millinery. She described in detail all the factors to be considered in the making of a hat: style, size, materials, color harmony, etc. Just as she finished describing her dream a young man walked from behind the curtain and handed her the very hat she had just described. She had spent hours in making the hat for this occasion, a genuine project for her.

33. One young man used as the title of his commencement oration, "The Principles of Geometry Applied to Mechanics." He used lantern slides showing beams and rafters used in a barn; braces and cross beams on a bridge; crowbars and levers in the handling of stone; and many other features of like character. This was a real live project for the young man.

34. The student body of a certain junior high school collected and classified all the grammatical errors observed for a period of one week. These errors were then made the basis of study in the English class for some weeks to come.

35. A boosters' club might be organized for the purpose of showing why their city or community is a desirable place in which to live.

36. Community civics offers a rich field in which many good projects may be worked out.

37. The building of a doll's house for the kindergarten-primary grades may make a splendid project for the manual-training class.

38. Splendid projects have arisen in connection with fly-swatting campaigns.

APPENDIX

A BOOK LIST FOR INTERMEDIATE-GRAMMAR GRADES

"A Weaving of Men's Hopes and Dreams"

Alcott, Little Women
Alcott, Old-Fashioned Girl
Aldrich, Story of a Bad Boy
Austen, Pride and Prejudice
Baker, Shasta of the Wolves
Bennett, Master Skylark
Blackmore, Lorna Doone
Briggs, Arnold Adair, American Ace
Bunyan, The Pilgrim's Progress
Burnett, Sara Crewe
Churchill, The Crisis
Coffin, Winning his Way
Cooper, The Last of the Mohicans
Davis, Boy Scouts and Other Stories
Defoe, Robinson Crusoe
Dickens, Christmas Carol
Dickens, The Cricket on the Hearth
Dickens, David Copperfield
Dickens, Little Dorrit
Dickens, Oliver Twist
Dickens, A Tale of Two Cities
Dodge, Donald and Dorothy
Dodge, Hans Brinker, or The Silver Skates
Dumas, The Count of Monte Cristo
Dumas, The Three Musketeers
Eliot, The Mill on the Floss
Eliot, Silas Marner
Ewing, Six to Sixteen
Fisher, The Bent Twig
Fisher, Home Fires in France
Gray, Ken Ward in the Jungle
Gray, The Young Forester
Hale, In His Name
Hale, The Man without a Country
Henry, Ransom of Red Chief
Heyliger, Against Odds
Heyliger, Don Strong, American
Hughes, Tom Brown's School-Days
Jackson, Ramona
Johnson, Stover at Yale
Kipling, Captains Courageous
Kipling, Puck of Pook's Hill
Knipe, Beatrice of Denewood
Knipe, Cavalier Maid
Knipe, Lucky Sixpence
Laboulaye, The Quest of the Four-Leaved Clover

Lampry, Masters of the Guild
Lanier, In the Days of the Guild
London, Call of the Wild
London, Jerry
London, White Fang
Martin, Emmy Lou
Martin, Tillie, a Mennonite Maid
Martineau, The Peasant and the Prince
Mathews, Boy Scouts' Book of Stories
Montgomery, Anne of Green Gables
Munroe, The Painted Desert
Ollivant, Bob, Son of Battle
Ouida, A Dog of Flanders
Page, Two Little Confederates
Poe, Tales
Porter, Scottish Chiefs
Rice, Sandy
Scott, Quentin Durward
Seaman, The Boarded-up House
Seaman, Jacqueline of the Carrier Pigeons
Seaman, Slipper Point Mystery
Shaw, Castle Balir
Shultz, Dreadful River Cave
Shultz, In the Great Apache Forest
Singmaster, John Boring's House
Singmaster, When Sarah saved the Day
Spyri, Heidi
Stevenson, Black Arrow
Stevenson, Kidnapped
Stevenson, Treasure Island
Taggart, Pilgrim Maid
Tarkington, Penrod
Tarkington, Penrod and Sam
Tarkington, Seventeen
Twain, Huckleberry Finn
Twain, The Prince and the Pauper
Twain, Tom Sawyer
Vachell, Hill
Van Dyke, Blue Flower
Wallace, Ben Hur
Wallace, Gaunt Gray Wolf
Wallace, Grit A-Plenty
Wallace, Ragged Inlet Guards
Wallace, Ungava Bob
Warner, Hunting of the Deer
Webster, Daddy Long Legs
Westcott, David Harum
Wiggins, Flag Raising at Riverboro
Wiggins, Mother Carey's Chickens
Wiggins, Rebecca of Sunnybrook Farm
Wyss, Swiss Family Robinson

"Old Songs, Old Legends, and Ancient Words"

Æsop, Fables
Andersen, Fairy Tales
Baldwin, Story of Roland
Baldwin, Story of Siegfried
Baldwin, Sampo
Buckley, Children of the Dawn
Carroll, The Story of the Iliad
Cervantes, Don Quixote

Church, Age of Chivalry
Church, Stories of the Old World
Colum, Adventures of Ulysses
Darton, Tales of the Canterbury Pilgrims
Darton, Wonder Book of Old Romance
Ellis, Tales of Enchantment from Spain
Fouqué, Undine
Francillon, Gods and Heroes
Greene, Legends of King Arthur and his Court
Grimm, Fairy Tales
Hawthorne, The Wonder-Book
Irving, The Sketch-Book
Kingsley, The Heroes
Kingsley, The Water Babies
Lanier, Boys' King Arthur
Lansing, Life in the Greenwood
Lansing, Page, Esquire, and Knight
Lansing, Tales of Old England
Mabie, Legends Every Child Should Know
Pyle, King Arthur and his Knights
Pyle, Story of the Grail and the Passing of Arthur
Pyle, Tales of Wonder and Magic
Ruskin, King of the Golden River
Swift, Gulliver's Travels
Zitkala-Ša, Old Indian Legends

"The Others Act and Speak to Suit his Book"

Lamb, Tales from Shakespeare
Mackay, Forest Princess
St. Nicholas, Book of Plays and Operettas
Shakespeare, Merchant of Venice
Smith, Plays, Pantomimes, and Tableaux
Stevenson, Dramatized Scenes from American History

"It's Far Afield I'm Faring"

Dana, Two Years Before the Mast
Kingsley, Westward Ho!
Kipling, The Jungle Book
Kipling, Kim
Lytton, Last Days of Pompeii
Masefield, Jim Davis
Mills, Scotch
Mills, Wild Life in the Rockies
Newbolt, Book of the Blue Sea
Parkman, The Boy Parkman
Parkman, Oregon Trail
Verne, Twenty Thousand Leagues under the Sea

"They Live in Valhalla who Fought for their Land"

CATLIN, Boys' Catlin
COUCH, Roll Call of Honor
CUSTER, Boots and Saddles
COE, Heroes of Everyday Life
FRANKLIN, Autobiography
GILBERT, More than Conquerors
GRENFELL, Adrift on an Ice Pan
HAMILTON, Robert E. Lee
HILL, On the Trail of Grant and Lee
IRVING, Life of Washington
JEWETT, God's Troubadour
JOHNSTON, Famous Scouts
KELLER, Story of My Life
LASELLE, Stories of the New America
MATTHEWS, Seven Champions of Christendom
McSPADDEN, Boys' Book of Famous Soldiers
MEADOWCROFT, Boys' Life of Edison
MOFFETT, Careers of Danger and Daring
MONROE, In Pirate Waters
MOWRY, American Inventions and Inventors
NICOLAY, Boy's Life of Abraham Lincoln
PARKMAN, Heroes of To-day
PARKMAN, Heroines of Service
RICHARDS, Florence Nightingale
STEEDMAN, When they were Children
WARREN, Four Old Greeks
WARREN, King Arthur and his Knights
WILMOT-BUXTON, Jeanne d'Arc

"The Deathless Watchword Wakes To-day—The Honor of the Land"

FRENCH, The Story of Rolf and the Viking's Bow
GREEN, Short History of the English People
GRINNELL, When Buffalo Ran
HAWTHORNE, Grandfather's Chair
LANG, True Story Book
LANIER, Boys' Froissart
NICOLAY, Book of American Wars
PORTER, Scottish Chiefs
PYLE, Men of Iron
READE, The Cloister and the Hearth
RICKENBACKER, Fighting the Flying Circus
ROBERTS, Flying Fighter
ROOSEVELT and LODGE, Hero Tales from American History
SCOTT, Ivanhoe
SWEETSER, Ten Girls from History
WOOD, Thrilling Deeds of the British Air Men

"There is ever a Song to Sing"

- Clark, Treasury of War Poetry
- Dunbar, Poems
- Field, Poems
- Gayley and Flaherty, Poetry of the People
- Gilder, Heart of Youth
- Holland, Historic Poems and Ballads
- Longfellow, Evangeline
- Miller, Poems
- Montgomery, Heroic Ballads
- Olcott, Story-Telling Ballads
- Repplier, Book of Famous Verse
- Riley, Poems
- Tennyson, Idylls of the King
- Wiggin and Smith, Golden Numbers

INDEX

Africa, sand map of, 55–71
American Legion reunion, 97–110
Annoyance in learning, 17–18
Attitudes, in education for democracy, 8–9; toward school work, 82
Axone, 16 note

Bluffing, 20
Bond between neurones, 16–17

Capacities, native, 4
Charters, Dr. W. W., 24
Child development, three stages of, 51–52; corresponding projects, 52–53
Christmas party, 193–197
Citizenship, desirable characteristics for, 24, 41; development of characteristics essential for, 82–83
Community relations in the kindergarten, 38
Community-building project, 229–236
Curriculum, function of, in education, 5–9; furnishes knowledge, 5; establishes habits, 6–8; establishes ideals, 8–9; standard for selection of, 42

Democracy, education for, 4, 27–28; in schools, 29–30, 185
Dendrite, 17 note
Department-store project, 198–205
Dewey, John, *How we Think*, quoted, 21–23; *Democracy and Education*, quoted, 37, 49
Drive in school activities, 9–16; in the teacher, 9–10, 34; in the child, 10–11, 235; artificially stimulated, 11–16; growing from a felt need, 70
Drug-store project, 206–217

Education, definition of, 5; in a democracy, 24–25
End-brush, 17 note
Excursion-train project, 218–224

Farm project, 157–165

Group work, 240

Habits, make knowledge a controlling force in conduct, 6; formation of, 24–25
Health campaign as opportunity for project in English, 84
Heidi, used to motivate Swiss Alps project, 124–126

Ideals in education for democracy, 8–9
Instincts, Norsworthy's classification of, 3; as motive powers of thought and action, 10–11; in stages of development, 52

Japanese matinée, 72–83
Johnnie and the Milk Fairies, story, 86; sketch written by fifth grade, 90–96

Kilpatrick, W. H., quoted, 16
Knowledge in education, 5

Learning, laws of, 17–18; readiness, 17, 185, 217; effect, 17; exercise, 17–18; in school activities, 18–20
Lesson procedure, in fourth-grade geography, 31–32, 39–40; in a college history class, 166–175; in a sixth-grade history class, 176–186
Literary contest, a, 136–156
Longfellow, Henry Wadsworth, *Kéramos*, quoted, 76

McDougall, William, *Social Psychology*, quoted, 11
McMurry, F. M., *How to Study*, quoted, 27
Market project, 225–228
Meaning, 36–37, 39, 40, 49
Memory, definition of, 26; affected by attitude, 26–27; in recitations, 31–32, 34–35
Milk Fairies, The, 84–96

Neurone, 16 note
Norsworthy, Naomi, and Whitley, M. T., *Psychology of Childhood*, quoted, 4

Organization in project teaching, 50–51, 123–128

Parker, S. C., *General Methods of Teaching in Elementary Schools*, quoted, 38
Penmanship, teaching of, 38
Play, writing a, 86–88
Pre-plan for a project, 44–45, 47–50
Primary room, a typical year in a, 187–197
Problem, meaning of, 42–43, 239; more inspiring than a topic, 64 note
Project, a larger unit of subject matter than a problem, 40, 42, 239; preparation for, 43–44; launching a, 44–46, 50, 58–59; form of pre-plan for, 47–50; organization in a, 50–51; plan of procedure for a, 53–54
Project method, 42; dangers in, 240–242; outlook for, 243–245
Projects, examples of: South America, 45–46; for different stages of development, 52–53; A Sand Map of Africa, 55–71; A Japanese Matinée, 72–83; The Milk Fairies, 84–96; An American Legion reunion, 97–110; The World's Series, 111–119; The Swiss Alps, 120–135; A Literary Contest, 136–156; The Farm, 157–165; a Christmas party, 193–197; A Department Store, 198–205; The Owl Drug Store, 206–216; An Excursion Train, 218–224; The City Market, 225–228; The Building of a Community, 229–236; suggestions for subject matter of, 246–251

Reading, teaching of, 37–38
Recitation, socialized. *See* Socialized recitation

Sand map of Africa, 55–71
Satisfaction in learning, 17–18
Silk industry in France, a geography lesson on, 107–109
Simple to complex in teaching, 36–39
Socialized recitation, 48, 154, 237–239; typical, 176–186
Store projects, department, 198–205; drug, 206–216
Strayer, G. D., and Norsworthy, Naomi, quoted, 24
Study, factors of, 34
Superficiality, danger of, with project method, 240–241
Swiss Alps, The, 120–135
Synapse, 17 note; in habit formation, 24

Testing for content, 32–33
Thinking, 21–23
Train project, 218–224

Visual education, 66 note

Willow-pattern plate used to arouse interest in oriental countries, 75, 77
Woodworth, R. S., *Dynamic Psychology*, quoted, 11
World's Series, why and wherefore of, 111–119